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Environmental Protection
Agency

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Emergency and
Remedial Response

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August [illegible]

EPA

Superfund Record of Decision: 18016

Laskin Poplar Oil Site, OH

ALTERNATIVE COSTS

Alternative	Thousand $ Water	Oils with Less Than 50 ppm PCB's	Oils with Greater Than 50 ppm PCB's	Total
Landfilling Offsite	256	256	640	1,152
Onsite Pretreatment Disposal at Local Wastewater Plant	124	--	--	NA
Oil Recycle	NA	9	NA	NA
PCB Reduction/Oil Recycle	NA	NA	840	NA
Incineration Offsite	71.5*	71.5	900	1,043
PCB Reduction/Incineration Offsite	NA	NA	957	NA
Containment Onsite	288	288	722	1,298
* Incineration Onsite	400	400	1,000	1,800

*Costs are contingent upon all three phases being disposed of by this option

TABLE 1

Responsiveness Summary
Laskin/Poplar Oil

Past Federal cleanup activities have resulted in mitigation of the most imminent health hazards at the Laskin/Poplar Oil site. Several emergency actions were taken after the site was discovered and during critical periods such as mudslides and flooding. A Superfund Planned Removal action was conducted at the site between July and October 1982. This action resulted in the removal of 302,000 gallons of waste oil for incineration, treatment and release of 430,000 gallons of contaminated water and solidification of 205,000 gallons of sludge, which were placed into Tank No. 4.

Prior to the initiation of the Planned Removal, the citizens were briefed at a public meeting on the proposed actions which included removal of the waste oil for incineration. There was complete acceptance of any action which removed the contaminated materials for proper off-site disposal.

The Focused Feasibility Study addresses 450,000 gallons of contaminated liquids remaining at the site and concluded that they must be removed from the site as soon as possible, to protect the public health, welfare and the environment. The study recommends that all of the these liquids be removed for incineration.

The study was made available at the public libraries in Jefferson, Ohio and Ashtabula, Ohio. A press release indicating the study's availability was issued to the Cleveland newspapers and to local newspapers. A copy of the study was also mailed to citizens who have indicated an interest in the site and to the steering committee which represents the generators of the waste.

There were no responses received as a result of this comment period, which extended from May 11, 1984 to May 27, 1984.

I have also determined that the action being taken is consistent with a permanent remedy at the site, and is appropriate when balanced against the availability of Trust Fund monies for use at other sites. In addition, the off-site transport and destruction is more cost-effective than other remedial actions.

August 9, 1982
Date

Valdas V. Adamkus
Regional Administrator

Attachment

RECORD OF DECISION

INITIAL REMEDIAL ALTERNATIVE SELECTION

Site: Laskin/Poplar Oil, Jefferson, Ohio

Documents Reviewed

I have reviewed the following documents describing the analysis of cost-effectiveness of remedial alternatives of the Laskin/Poplar Oil site:

- Focused Feasibility Study, Laskin/Poplar Oil Site
- Summary of Remedial Alternative Selection
- Responsiveness Summary
- Letter from Robert H. Maynard, Director, Ohio Environmental Protection Agency

Description of Selected Remedy

- Removal of contaminated water from the site for incineration with the oil
- Removal of oil contaminated with less than 50 ppm PCB's for incineration.
- Removal of oil with greater than 50 ppm PCB's for incineration

Declarations

Consistent with the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), and the National Contingency Plan (40 CFR Part 300), I have determined that the removal and off-site disposal of all liquids in the above ground and in ground tanks is a cost-effective initial remedial measure necessary to minimize the release of hazardous substances so they do not migrate to cause harm to public health, welfare or the environment. The State of Ohio has been consulted and agrees with the selected remedy. This action will require no future operation and maintenance activities.

Summary of Remedial Alternative Selection
Laskin/Poplar Oil
Jefferson, Ohio

SITE DESCRIPTION

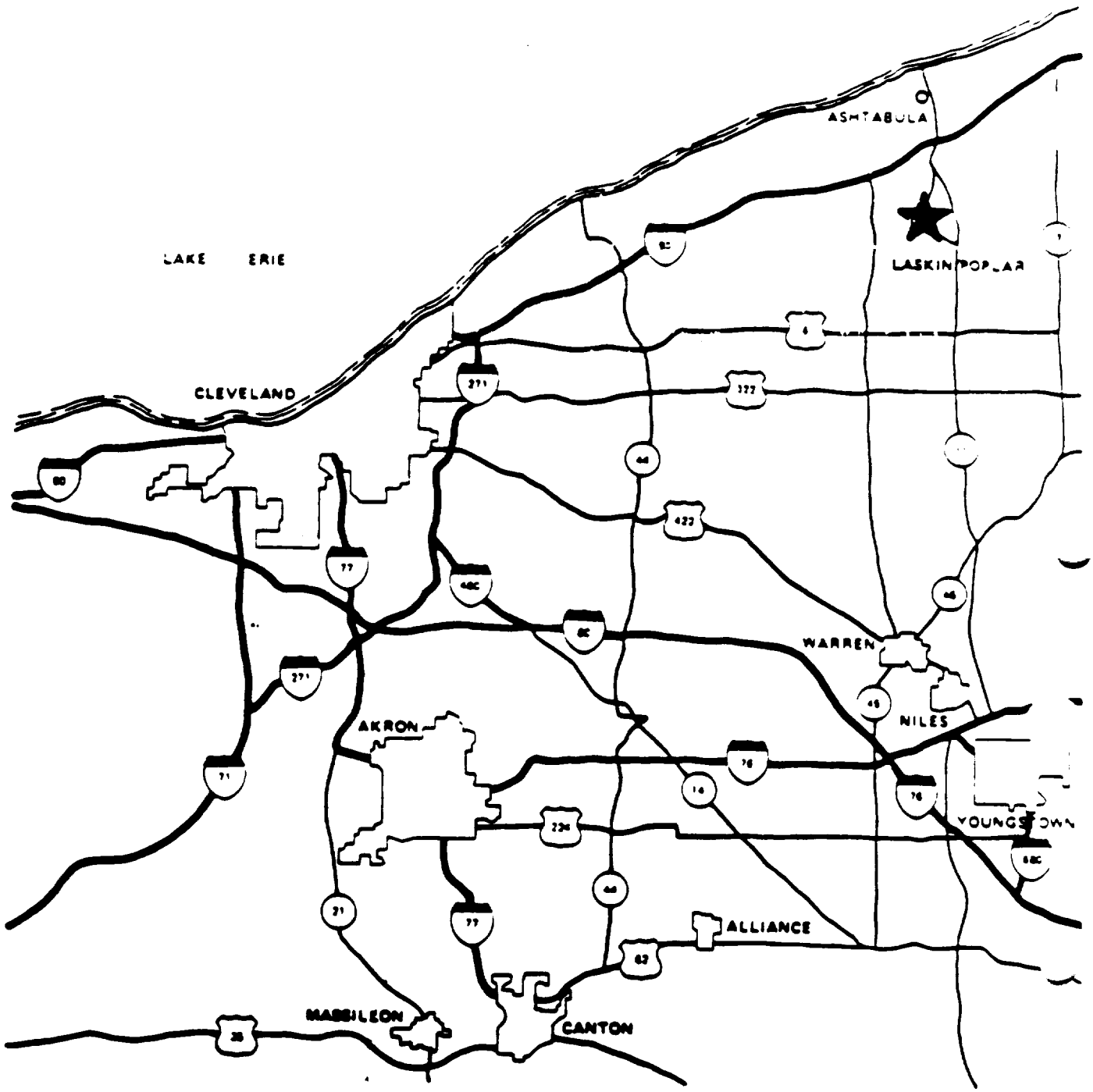
The Laskin Poplar Oil site of about 9 acres is in northeastern Ohio within Jefferson Township in Ashtabula County, west of the village of Jefferson. It is bounded on the north by a wooded ravine through which Cemetary Creek flows; on the south, by open fields and the Ashtabula County fairgrounds; on the west, by a wooded area and baseball fields; and on the east, by Poplar Road and the fairgrounds. (See Figure 2-1)

The site contains the residence of Mr. Alvin Laskin, owner of the property; a series of greenhouses; four boilers used to heat the greenhouses; a boiler stack; approximately thirty-six storage tanks; one retention pond; a freshwater pond; and miscellaneous buildings and sheds. Approximately 450,000 gallons of oil and water-oil mixtures are stored in the tanks.

SITE HISTORY

The greenhouses on the Poplar Oil Company site were in operation for about 80 years. Approximately 30 years ago, boilers were installed to heat the greenhouses. During the 1960's storage tanks were installed to hold waste oil to fire the boilers. The oil was not analyzed before acceptance, and oil containing PCB's phenols, and other hazardous substances was accepted. When the greenhouse business deteriorated, the owner began picking up, reselling, and disposing of waste oil. The company's activities also included oiling roads in Ashtabula County and a nearby horse racing track. Through a series of legal actions, the company is now in receivership, and all on-site business activities relating to oil have essentially stopped.

Past Federal cleanup activities have resulted in the mitigation of the most imminent health hazards. Several emergency actions were taken after the site's contamination was discovered and during critical periods such as mudslides and flooding. Superfund Planned Removal cleanup actions removed 302,000 gallons of waste oil for incineration; treated and released 430,000 gallons of contaminated water; and solidified 205,000 gallons of sludge which was placed in Tank No. 4. Also, a cover was built onto Tank No. 3 and the north wall was removed from pond 12. (See Figure 2-3) These actions were accomplished between July and November 1982.



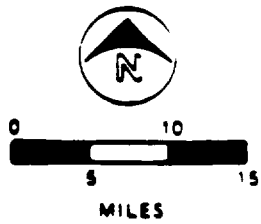


FIGURE 2-1
VICINITY MAP
LASKIN/POPLAR

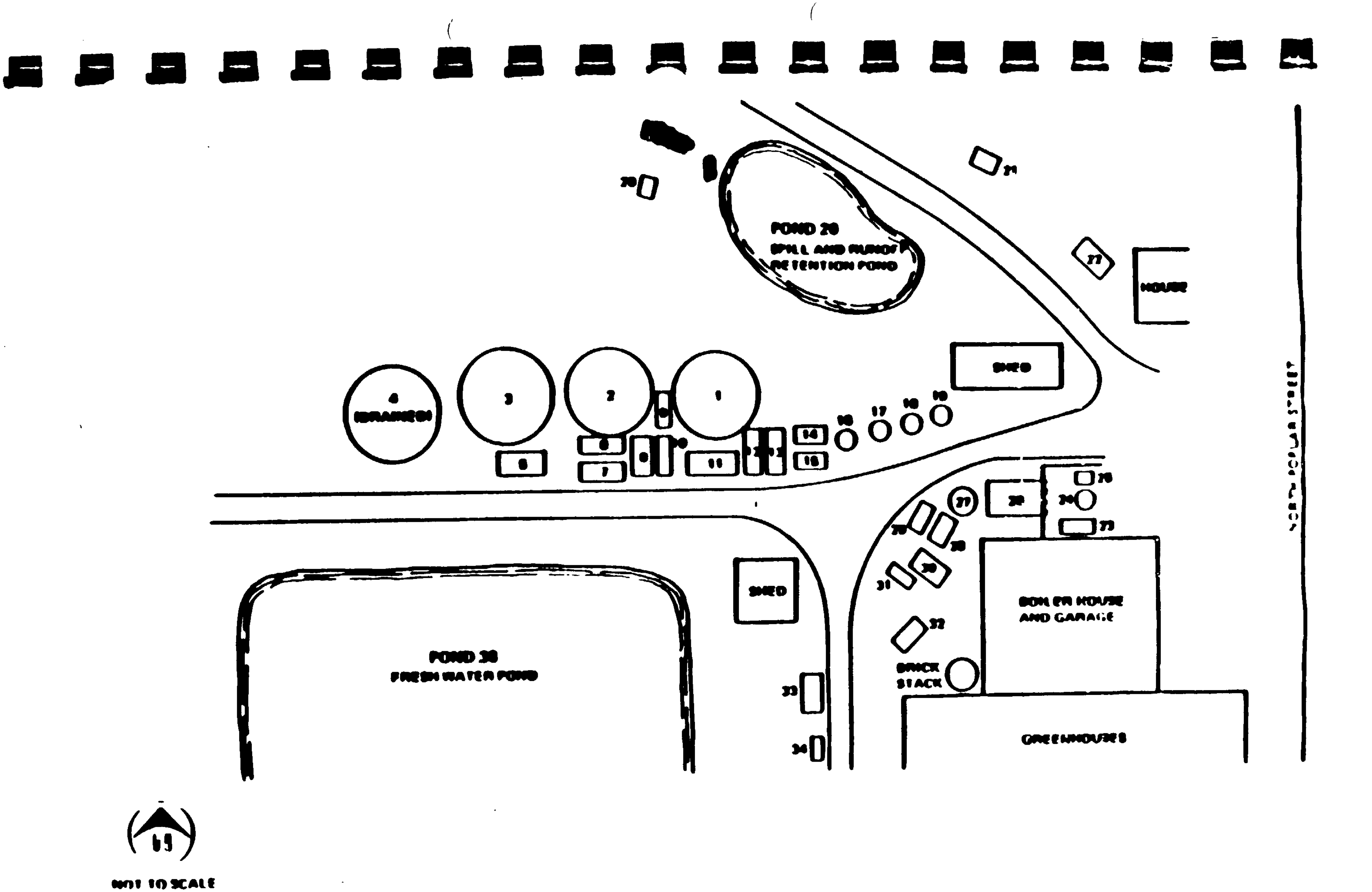


FIGURE 2 3
COMPANY SITE
LASKIN POPLAR OIL

SOURCE State of Ohio Office of Attorney General

CURRENT SITE STATUS

The liquids on the site are characterized as:

Oils with PCB Content of 50 ppm or Greater

- Approximately 250,000 gallons total are contained in 3 tanks.
- Other priority pollutants and metals are also in the PCB oil including: carcinogenic volatile organic compounds, carcinogenic and noncarcinogenic base/neutral compounds, phenol, and potentially toxic metals.
- The main component is waste oil with an estimated heating value of 18,000 Btu per gallon.
- The oil also contains suspended solids.

Oils With PCB Content of Less Than 50 ppm

- Approximately 100,000 gallons are in 24 tanks.
- Other characteristics are the same as for the oils with greater than 50 ppm of PCB, including the volatiles, base/neutral compunds, phenol, and metals.

Contaminated Water

Approxi[illegible]ly 100,000 gallons of water with high suspenc[illegible]olids and bottom sludges are in Tank No. 3. [illegible] oil sheen can be observed on the water surface.

Discussion

The presence of these liquids is a potential health hazard and is a logistics barrier to the further investigation of the site and an evaluation of final remedial actions.

There is a continuing potential for health and environmental hazards from the presence of the liquids on site. Release of the contaminated liquids would pose a public health and environmental threat.

The most obvious and immediate threat is from contamination entering Cemetery Creek. A fire would probably be accompanied by a spill releasing some or all of the substances.

Cemetery Creek runs along the northern edge of the property. Runoff or seepage into the creek may be contaminated by the existing conditions at the site. Cemetery Creek flows into the Grand River, which is the main drinking water supply for nearly 25,000 people in Ashtabula County.

Discharge of contaminated oil and waste to Cemetery Creek may have already introduced PCB's into the aquatic ecosystem. Since PCB's are fat soluble, the potential exists for concentration in the aquatic food chain and eventually into the human system. Bioconcentration factors for PCB's in fish range from about 3,000 to 274,000. Some wildlife species (mink) are more sensitive than humans, and the present EPA criterion is based on the bioconcentration in salmonid fish and toxicity to mink.

Contamination of Cemetery Creek could lead to ingestion of PCB's and other contaminants. This could occur either by contamination of drinking water supplies or by ingestion of contaminated fish.

Some of the organic contaminants are bioconcentrated. Examples are the higher molecular weight polynuclear aromatic hydrocarbons (PAH's) such as phenanthrene, naphthalene, anthracene, and pyrene. These compounds could be ingested by humans and wildlife eating contaminated fish.

With these potential health hazards continuing as long as the liquids are on site and the logistics block they present to further progress toward an eventual remedial action, it is considered both necessary and prudent that the liquids be removed from the tanks at the earliest practicable time.

ENFORCEMENT

Litigation concerning environmental problems at this site has been on file in both state and federal courts since early 1979. The only defendants currently involved are Alvin Laskin and several corporations set up by him. Laskin and Poplar Oil Company are subject to consent decrees in both state and federal proceedings, but are effectively judgement proof.

U.S. EPA has identified some 100 potential responsible parties (PRP's) who either transported or consigned waste material to the site. These include a broad spectrum of firms, including both large and small organizations. Notice and demand letters have been sent to each, beginning in about April 1982. U.S. EPA divided the PRP's into first and second tiers, based on volume of waste sent to the site, and negotiated for about 8 months with the first tier group. No acceptable offer was forth coming, and it is not believed that further negotiations will prove fruitful.

A referral is currently pending at the Department of Justice seeking recovery of a discrete unit of costs incurred to date at the site (some $1.6 million of CWA § 311 and CERCLA § 104 funds) spent in emergency or Planned Removal actions.

It is unlikely that PRP action will be forthcoming in voluntary negotiations. As a result, the program office will be sending out unilateral CERCLA § 106 orders to four or five PRP's who can be directly linked to materials found at the site. In this manner we will determine whether there will be any PRP response.

COMMUNITY RELATIONS

A press release was issued on May 10, 1984 which announced the availability of the Focused Feasibility Study for review at libraries in Jefferson and Ashtabula, Ohio. Copies were also mailed to interested people including Congressman Eckart and Senator Metzenbaum. The public comment period was from May 13 to May 27, 1984. There were no responses received as a result of this public comment period.

ALTERNATIVES EVALUATION

The evaluation of a limited number of alternatives is controlled by the following practical and regulatory constraints:

1. Essentially complete removal from the environment of all liquids (oil and water) is required to mitigate the potential hazard to public health. Pond 20 will need to remain as a catch basin until all contaminated sludges and soils are adequately controlled.

2. The provisions of 40 CFR 761 (31 May 1979) regulate the disposal of all PCB containing liquids. At or below 50 ppm PCB, liquids are non-regulated, except for uses resulting in direct, wide spread contamination. Above 50 ppm PCB, disposal is regulated and defined. Mixing, or dilution of clean and dirty oil is not permitted to achieve a lower PCB concentration to avoid the regulations.

3. Water to be discharged to Cemetery Creek must meet criteria specified by the Ohio EPA.

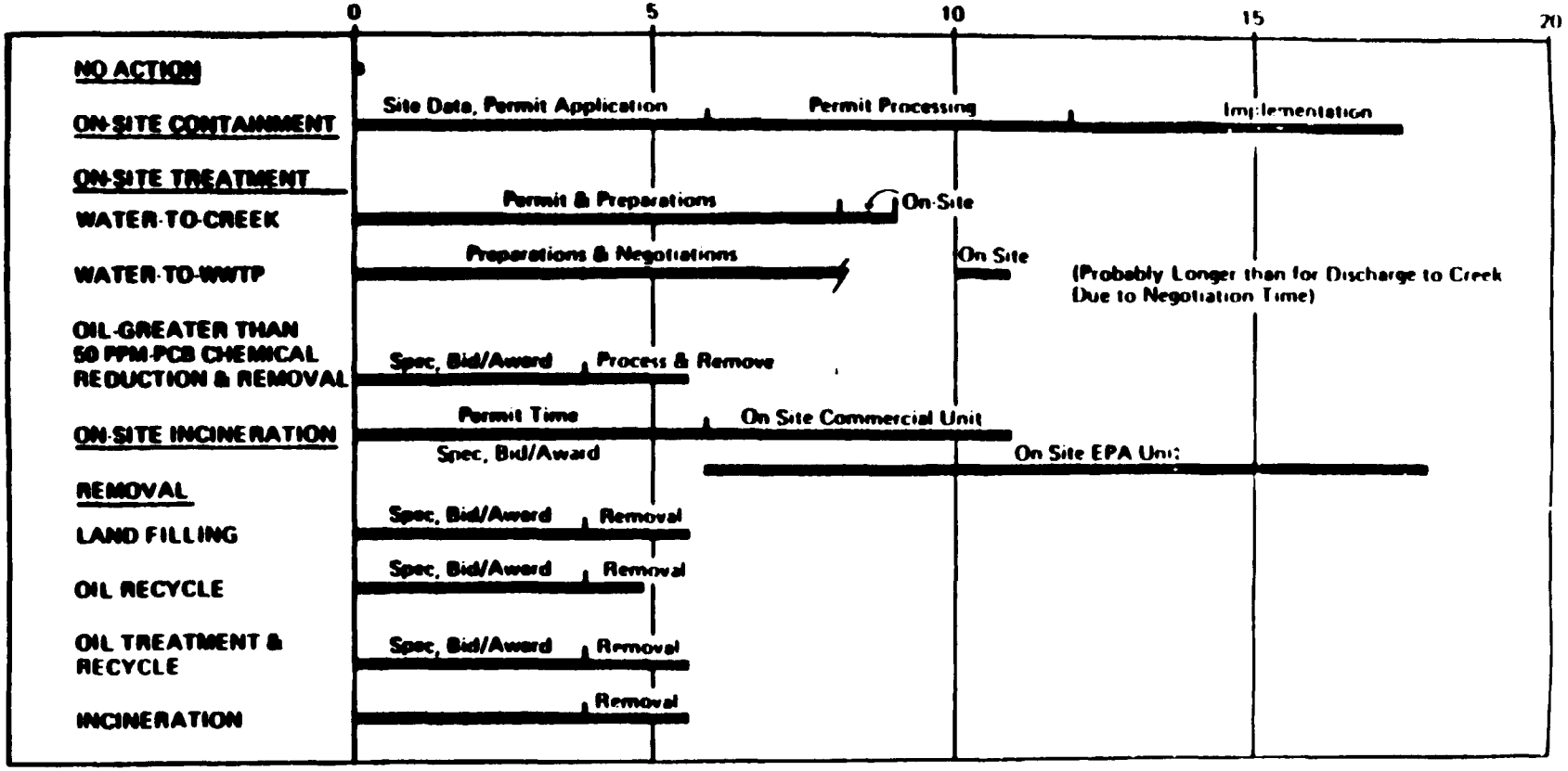


TABLE 2
Comparative Time Lines – Months from Authorization to Implement

Different removal alternatives will apply to the liquids depending on the handling and disposal regulations. Three categories of liquids are therefore considered separately.

- PCB contaminated oil: 50 to 500 ppm PCB concentration.
- Low PCB contaminated oil: detectable to less than 50 ppm PCB concentration.
- Contaminated wastewater: Low level PCB, high suspended solids, oil and grease, and unknown metals concentrations.

Alternatives considered were no action, onsite containment, onsite treatment, onsite incineration, and removal offsite for final disposal.

A. NO ACTION

Public health considerations have ruled out a "no action" alternative for the liquids. Even deferring liquid removal until a future full Remedial Action is considered not prudent. The endangerment aspects of this alternative were discussed in the current Site Status of this report. The oils are flammable and if a fire started a health hazard could exist due to the combustion products or through volatilization of hazardous substances from the site. The potential for spillage to Cemetary Creek exists which could contaminate the water supply for 25,000 people in Ashtabula County. The environment also could suffer significant degredation from a spill into Cemetary Creek.

B. ONSITE CONTAINMENT

The liquid wastes could be stabilized and buried onsite. Stabilization would require the oil or water to be pumped from the storage tanks and mixed with a binding agent to form an inert cement-like product. The stabilized material would then be transferred to a truck prior to solidifying and transporting to a burial area onsite. A contractor specializing in solidification would be utilized for the actual mixing, stabilization, and transport to the burial site. This process may produce noxious odors in off-gases which could be a nuisance and possibly present operating problems. Decontamination facilities would also be required to wash the mixing and transporting equipment.

The burial area would have to be designed to meet RCRA and TSCA requirements for hazardous waste disposal since the water and oil contaminants contain regulated materials. The design considered at other hazardous sites and as proposed by regulations has been a double-lined clay, plastic or asphaltic basin with a between-liner underdrain system. The burial site would have to completely contain all materials for a minimum of 30 years and be continuously monitored, secured, and maintained. Therefore, a prolonged and scheduled surveillance and maintenance plan would have to be implemented to constantly protect and identify the integrity of the landfill. A cost summary follows.

Activity	Cost	Basis
Burial Site	$ 360,000	450,000 gallons of liquids stabilized to twice volume equals 4,500 cubic yards; $80/cubic yard for a double-lined landfill
Permitting	102,800	One-year effort 1/2 time for two people; $200 per day per person for labor and $50,000 for travel, field laboratory work, and other expenses and report preparation
Stabilization	675,000	4,500 cubic yards produced at $150 per cubic yard for materials equipment, hauling, and labor
Postclosure O&M	57,000	$5,000 per year (present worth) at 8 percent per year for 30 years
Total	$1,192,000	

The overall schedule for containment would be 18 to 24 months, depending upon the success of the permitting effort.

C. ONSITE TREATMENT

Contaminated Water

The water stored in Tank No. 3 has been characterized as containing a wide variety of metal, PCB's and other organic contaminants. Additional data and bench tests would be required to confirm a detailed process design for onsite treatment. However, it is reasonable to consider that minimum treatment processes would be pH adjustment in the tank with lime and in-place sedimentation followed by sand and then activated carbon filtration. Discharge would be either to Cemetery Creek or to a local wastewater plant. Waste sludges from this process would be packaged and left on site for disposal during the remedial action.

The treated effluent would be held in storage until laboratory analyses indicated compliance with the applicable requirements for release. If compliance was not met, retreatment would be required. NPDES permit standards for discharge to the creek would need to be met. If discharge is to a treatment plant, transport to the plant and a discharge fee would be required.

Care would have to be taken in the handling, pumping, and onsite storage of the water before, during, and after treatment. An accidental spill could result in the possible contamination of soil at or around the storage tank. If the waste is to be transported or pumped to another location onsite, then it could spill anywhere, including Cemetery Creek.

Treatment and discharge to the creek are essentially the process used in the 1980 removal of contaminated water from Ponds 19 and 20. In that operation, approximately 830,000 gallons of water were treated at a cost of about $400,000.

Therefore, the minimum cost for processing about 100,000 gallons of water in 1984 to meet requirements for discharge to the creek is estimated at between $200,000 and $285,000, considering that one-fourth to one-third of the costs would be fixed and not directly related to the volume processed. A cost summary follows.

Activity	Cost	Basis
Fixed Cost	$133,000	Fixed costs (mobilization/ demobilization, labor administration, etc.) at 1/3 of 1980 total cost
Treatment	32,000	Treatment costs for 100,000 gallons at 32 cent per gallon (treatment cost at 2/3 of 1980 total fixed cost)
Permitting	40,000	Pilot studies and permit preparation at 5 man-months plus expenses
Escalation	77,000	Escalation at 10% per year for 4 years for both fixed and treatment costs
Total	$282,000	

If fixed costs were 25 percent of total costs, the estimated cost for treatment would be $249,000. If treatment proceeded well, the onsite operation would take about one month.

Cost for the alternative of onsite pretreatment and discharge of pretreated water to a local wastewater treatment plant would probably be less than for discharge to the creek because it is expected that, if suitable arrangements could be made with a treatment plant, the treatment requirements would be extensive, though not as stringent as for discharge into the creek. Costs for this alternative are estimated as follows:

Activity	Cost	Basis
Pilot Studies	$ 4,000	Two week effort and expenses
Fixed Costs	98,000	One-half of costs for treatment for discharge to creek (includes escalation to 1984)
Treatment	20,000	At 20 cents/gallon treated
Plant Fee	2,000	Preliminary estimate
Total	$124,000	

This estimate is based on the 1980 water treatment overall cost and volume with some adjustments made for escalation and other factors noted above and should be considered as a conceptual estimate only. Approximately one month's time would be required for the onsite operation, and the overall time period would be heavily dependent on obtaining agreement at a treatment plant to accept the wastewater.

Greater Than 50 ppm PCB Oils

If these oils were treated onsite to reduce the PCB concentration to less than 50 ppm, they could be sold as fuel outside Ohio or incinerated at the only permitted incinerator in Ohio.

PCB reduction processes are designed to reduce by chemical means the PCB's into chemically smaller, harmless compounds. The processes are used by electric utilities to clean transformer oils that have residual PCB concentrations. The oils to be treated must be free of suspended material, moisture, and sludges to prevent the sodium-based reactant chemical from blinding or decomposing. There is one commercial process that can reduce PCB-contaminated oil without pretreatment. The vendor is presently treating 100,000 gallons of oil containing paint sludge and PCB's to a level of less than 50 ppm PCB. Their treatment equipment is portable, and treatment is being done onsite in another state. Limited commercial experience exists with this process on PCB-contaminated waste oils, and the technology is still under development.

The costs for onsite chemical treatment to reduce PCB's are summarized as follows:

Activity	Cost	Basis
PCB Reduction	$750,000	250,000 gallons at $3 per gallon--includes operators
Additional Crew	70,000	One month cleanup would require two men to evacuate tanks, clean up, decontaminate, etc.
Lab Costs	15,000	Estimated
Total	$835,000	

A period of 4 to 6 weeks should be allowed for chemical reduction of the PCB's.

Some environmental concerns exist. Onsite pumping, transporting, and treating of wastes could cause spillage or a fire. PCB reduction chemicals (especially elemental sodium) are explosive and could pose a threat if not handled properly. Also, waste sludges generated from either pretreatment of the oils or the process must be disposed of in a safe manner.

Less Than 50 ppm PCB Oils

This type of oil does not require onsite treatment since it can be sold for fuel or incinerated.

D. ONSITE INCINERATION

Contaminated oil could be incinerated and water evaporated onsite by using a portable incinerator. There is one commercially available portable incinerator and one owned by the U.S. EPA. Both incinerators are fully equipped and designed to provide the temperature and residence time required for organics destruction and also to provide flue gas scrubbing and monitoring capabilities.

Ash disposal is a consideration for any onsite incinerator and could be disposed of with the ultimate site cleanup.

Based on estimate from the commercial portable incinerator operator, the cost for portable incineration of the waste oils and water would amount to approximately $1,800,000 at $4 per gallon. It would take 4 to 5 months to set up and incinerate the waste materials with a portable incinerator. Costs for the U.S. EPA incinerator were not estimated but at the estimated treatment rate it would take about 12 months to burn all the oil.

Several environmental considerations should be explored with this alternative: a potential explosion or fire, a spill during the transfer of waste oil, and out-of-specification incineration gases. An explosion is unlikely, but its consequences could environmentally impact the site and its surroundings. A spill could contaminate soil or even enter Cemetery Creek if the waste oil required hauling to another location onsite. There could be instances of out-of-specification incinerator gases; but given the technology and monitoring of the equipment, these should be short-lived.

E. REMOVAL FROM SITE

The contaminated material could be removed from the site by a licensed commercial contractor and disposed in any one or combination of the following alternatives:

- Landfilling
- Oil recycle
- Oil PCB reduction and recycle or incineration
- Incineration

1. Landfilling (All liquid wastes)

There are several landfill sites in the Midwest available for Laskin Poplar site wastes. The one used in this estimate is about 150 miles from the site. Stabilization of the liquids would be done onsite and the stabilized material transported to the landfill. As discussed previously, odor production during stabilization could be a problem.

Landfilling cost estimates are based on information obtained from a local hazardous waste contractor for the stabilization and disposal of water, contaminated oil containing less than 50 ppm PCB's, and oil with greater than 50-ppm PCB's. A preliminary cost estimate for landfilling is summarized as follows:

Activity	Cost	Basis
Onsite Stabilization of Oil and Water	$675,000	Described on page 6.
Transportation	425,000	Estimated at $3.50 per truck mile, 300 mile round trip to landfill, 4,500 cu. yds at 27,000 lb/cu. yd., 15T/load.
Lab Costs	20,000	Estimate
Disposal at Landfill	31,000	Estimated at $5/ton.
Total	$1,151,000	

The estimated cost for landfilling the oil containing greater than 50 ppm PCB's is $640,000. The estimated cost for landfilling the oil containing less than 50 ppm PCB's and water is $256,000 each.

A period of 6 to 8 weeks should be allowed for liquids removal.

Environmental threats posed by this alternative arise from potential accidents during the handling, processing, and transport of the waste materials, and from the landfill as a long-term contamination source.

2. Oil PCB Reduction by Chemical Means and Recycle

A. Less than 50 ppm PCB's

Recycle of waste oil as a fuel is a potential disposal route. Waste oils with PCB contamination of less than 50 ppm can be used as a fuel.

A problem with this disposal alternative is the possibility of inaccurate waste oil manifesting and the potential of the oils being used for asphalting or oil-based spraying, both illegal practices and potential paths into the environment. These waste oils would, therefore, have to be tracked or monitored to assure proper disposal.

The only costs incurred with low PCB oil recycle are the administration of the contract, supervision to observe and monitor the oil off-loading and disposal, and some lab analysis. A summary follows.

Activity	Cost	Basis
Transportation/Recycle	0	Recycler will take at no charge
Supervision	$4,000	Two weeks at $2,000 per week
Lab Costs	5 00	Estimate
Total	$9,000	

B. Greater than 50 ppm PCB's

Chemical treatment may be a possible route for the reduction of PCB contamination levels in oils to less than 50 ppm. This would then allow the oils to be recycled or incinerated. If the costs for PCB reduction are combined with the costs for recycling, the resulting costs can be summarized as follows:

Activity	Cost	Basis
PCB Reduction	$835,000	Described on page 9
Supervision	5,000	Estimate
Total	$840,000	

A period of 4-6 weeks should be allowed for PCB reduction and removal from site.

3. Offsite Incineration

Incineration is a commonly used disposal route for waste oils and even wastewater. Incineration could be contracted with a firm in Ohio for the wastewater and oils with less than 50 ppm PCB's. For oils with greater than 50 ppm PCB's incineration would have to be done out of state. In the case of the oil with greater than 50 ppm PCB's, the incinerator equipment must be designed to meet EPA criteria for furnace temperature and residence time, be fitted with the required air pollution abatement equipment, and be permitted. A cost estimate for incinerating the various wastes is summarized as follows:

Activity	Cost	Basis
Transportation		
Wastewater to incinerator	$ 14,000	90 miles one way at $3.80 per mile and 20 truckloads
Less than 50 ppm PCB oil to incinerator	14,000	Same
Greater than 50 ppm PCB oil to incinerator	105,000	300 miles one way at $3.50 per mile and 50 truckloads
Incineration		
Wastewater	35,000	$0.35 per gallon
Less than 50 ppm PCB oil	35,000	$0.35 per gallon
Greater than 50 ppm PCB oil	750,000	$0.40 per pound, or approximately $3.00 per gallon
Onsite Crew		
Wastewater	70,000	Estimate for all site removal (same as landfilling)
Less than 50 ppm PCB oil		
Greater than 50 ppm PCB oil		
Lab Costs	20,000	Estimate
Total	$1,043,000	

A breakdown of the total estimated cost for incineration is $900,000 for the oil with greater than 50 ppm PCB, and $71,500 each for water and oil with less than 50 ppm PCB.

If the oil containing greater than 50 ppm PCB's is chemically reduced and incinerated the costs are as follows:

Activity	Cost	Basis
PCB Reduction	$835,000	Described on page 9
Transporation to incinerator	34,200	90 miles one way at $3.80 per mile and 50 truckloads
Incineration	87,500	250,000 gallons at $0.35 per gallon
Total	$956,700	

The total incineration cost of all liquids if the greater than 50 ppm PCB oil is chemically reduced is $1,134,700.

Onsite PCB reduction would not offset the cost of incineration but, instead, would increase the total cost for waste incineration.

A period of 6 to 8 weeks should be allowed for liquid removal if each liquid is removed separately. If all are removed at the same time (two contractors onsite), the duration could be half as long. The State of Ohio compiles detailed information on intrastate highway traffic. In 1983 there were 268 highway wrecks or spills that involved trucks. Of that number, 37 were hauling hazardous wastes. Annually, there are approximately 1.2 million placarded truck shipments that include chemicals, fuels, hazardous materials, etc. Recent records show that for the amount of traffic in the state there are relatively few spills involving hazardous materials. Therefore, with reasonable care and precautions, offsite transportation from Laskin Poplar does not seem to pose a significant environmental threat.

Alternatives Evaluation

Each alternative was screened based on the following evaluating criteria:

- Cost of implementation
- Availability of technology--availability of commercial equipment, services, or technology that is required to implement an alternative
- Ease of implementation--the relative difficulty required to actually carry out an alternative
- Schedule--the approximate time to implement the alternative
- Environmental consideration--ability of the alternative to meet the short- and long-term environmental requirements and goals established by the U.S. EPA and OEPA.

Onsite containment of oils and water (450,000 gallons) would cost in excess of $1,300,00 and require 18 to 24 months for implementation. This alternative would require operations and maintenance cost for at least 30 years.

Onsite incineration of oils and water would cost about $1,800,000 and would take about twelve months to complete. This alternative would be very unacceptable to the local residents because of the past incineration practices by the owner of the site. Both of these alternatives are ruled out by the high cost and the long time to complete the alternative.

Onsite treatment of the contaminated water followed by discnarge to the creek or a wastewater treatment plant would cost substantially more than offsite incineration, with little additional environmental benefit. These alternatives are rejected.

Onsite treatment of the oil containing greater than 50 ppm PCB followed by recycling or incineration in Ohio is competitive with landfilling or incineration outside Ohio on a cost basis. The technology to accomplish this is very new, however, and has been utilized on a very limited basis; the effectiveness of the treatment cannot be assured. The process utilizes hazardous materials including elemental sodium which presents a danger of fire or explosion. Since a fire was a prime concern in the endangerment assessment, the treatment alternative is not considered a viable alternative. As a result of the previous evaluation, neither onsite treatment or disposal of any liquids is considered a viable option.

The contaminated water and the oil above and below 50 ppm PCB can be removed from the site for landfilling. The cost for the contaminated water and oil below 50 ppm PCB is substantially higher than the other alternatives. This alternative doubles the volume of the wastes during the solidification process which must be done on site. Some of the wastes are very persistent and will remain in the landfill for an extended period and could cause environmental damage in the future.

The cost to incinerate the oil above 50 ppm PCB is $260,000 more than landfilling but this process destroys the hazardous substances including the PCB's, eliminating the future threat posed by them. The benefits derived far outweight the additional cost.

The below 50 ppm oil could be recycled but this presents management problems in assuring that the oil does not cause additional problems elsewhere. By incinerating the oil with the contaminated water the cost is comparable with pretreatment and discharge to a wastewater treatment plant and recycling of the oil. (See Table 1 and 2)

RECOMMENDED ALTERNATIVE

The recommended alternative as evaluated under 40 CFR Part 300.68(j) is incineration for all three components: contaminated water, oil above 50 ppm PCB and oil below 50 ppm PCB. This alternative is very implementable and uses established technology. It eliminates permanently the threat of the hazardous substances to the public health, welfare and the environment. This is the most cost effective solution to the problem when considered over the long term.

CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

The recommended alternative is in full compliance with 40 CFR 761 which regulates the disposal of liquids containing PCB. This alternative provides a permanent solution to the problem within the guidance of this regulation. The recommended alternative is also consistent with all other agency laws and regulations.

8905K

DECLARATION FOR THE RECORD OF DECISION

Site Name and Location

Laskin Poplar Oil Site
Jefferson, Ohio

Statement of Basis and Purpose

This decision document presents the United States Environmental Protection Agency's (U.S. EPA's) selected remedial action for the Laskin Poplar Oil site located in Jefferson, Ohio. This decision document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the National Contingency Plan (NCP). This decision is based on information and documents contained in the administrative record for this site. The attached index identifies the items that comprise the administrative record upon which the selection of the remedial action is based.

The State of Ohio does not concur with the U.S. EPA's remedy selection. The Ohio Environmental Protection Agency (OEPA) has indicated a preference for a different alternative which was presented in the U.S. EPA's Feasibility Study. A brief discussion on this issue is presented later in this document.

Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of the Selected Remedy

This remedy is the final remedial action for the Laskin Poplar Oil site. The combination of the Source Removal Operable Unit and the remedial action chosen in the attached Record of Decision constitute the final and overall [redacted] for the site. The primary goals of the remedial actions at the [redacted] Poplar Oil site are:

- [redacted] any human exposure to residual hazardous waste [redacted] of or contaminated materials at the site, and;
- to address all potential risks to human health and/or impacts to the environment.

The Remedial Investigation (RI) for the Laskin Poplar Oil site identified areas of concern that include areas of disposed hazardous waste, contaminated soils, sediments, groundwater, structures and debris.

The potential risks associated with the site are posed by direct contact

with incidental ingestion or inhalation of contaminated soils, sediments, material in the boiler house, and human consumption of contaminated on-site groundwater. The selected remedy addresses all site concerns by a combination of containment, treatment, and site use restrictions. Contaminated soils and sediments will be contained by a multi-layer cap which will greatly reduce infiltration, thus reducing the likelihood of future ground water contamination. A groundwater diversion trench will be installed around the site to prevent groundwater from passing through contaminated soils. Dioxin-contaminated materials inside the boiler house including soils, ash, and structural debris will be thermally treated. Ash resulting from the incineration process will be disposed of on-site (if delistable) or off-site at a Resource Conservation and Recovery Act (RCRA) facility. An attempt to decontaminate any dioxin-contaminated structures that are not amenable to thermal treatment will be made. If any of this material cannot be thermally treated or decontaminated, it will be properly contained in a concrete vault on-site. The concrete vault will be placed on-site beneath the cap. Additionally, because the dioxin waste and contaminated material will remain on-site, the selected remedy will provide for long-term monitoring for groundwater, surface water, and performance of the trench and cap. Corrective action measures will also be taken should monitoring indicate a failure of any component of the remedy. Site use and access restrictions will be placed on the property to ensure the integrity and performance of the remedy.

The major components of the selected remedy consist of the following:

- Drain retention and freshwater ponds. Discharge surface water from ponds to Cemetery Creek, with treatment if required. Backfill freshwater pond with clean fill and grade retention pond area.
- Thermally treat contaminated soil, ash, and debris from the boiler house area and dispose of ash on-site (if delistable) or off-site in a RCRA landfill.
- Demolish and thermally treat or decontaminate dioxin-contaminated structures. If material can not be decontaminated or thermally treated, contain material in an on-site concrete vault and place beneath the cap for temporary storage until proper effective disposal can be secured for the material.
- Co[redacted] a groundwater diversion trench up-gradient of the c[redacted]ed soil and groundwater.
- C[redacted] multi-layer cap over soils in exceedance of 10^{-6} e[redacted]etime cancer risk level or Total Hazard Index of 1.
- De[redacted] site by natural groundwater flow to Cemetery Creek.
- Conduct groundwater and surface water monitoring to assess quality of groundwater migrating towards Cemetery Creek.
- Impose access and use restrictions.
- Estimated Total Cost: $ 11,000,000.00
- Estimated time to complete: 2 years

I appreciate your concern in this matter, and thank you for taking the time to comment early in the process. I hope we can reach an agreement on the remedy at Laskins/Poplar. If you have any questions or additional comments, please do not hesitate to contact me.

Sincerely yours,

Original signed by
/s/ Frank M. Covington

Valdas V. Adamkus
Regional Administrator

Declaration

The selected remedy is protective of human health and the environment, attains federal and State requirements that are applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. Treatment is not a major component of this remedy, as thermal treatment of approximately 300 cubic yards of dioxin-contaminated material is the only treatment component of the remedy. The 1987 Source Removal Operable Unit does address the principal threat posed by the site through thermal treatment of contaminated source materials. The principal threats are considered to be the waste oil, sludge, and saturated soils near the pits and tanks (approximately 5,000 c.y.), which will be thermally treated on-site under the Source Removal Operable Unit. The combination of the two remedial actions satisfy the statutory preference for treatment as the principal element of the final remedy. The remedy also will reduce the volume, toxicity, and mobility of hazardous substances present at the site.

Because this remedy will result in hazardous substances remaining on-site, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Valdas V. Adamkus, Regional Administrator
U.S. Environmental Protection Agency, Region V

FIGURES

TABLES

1.0 SITE NAME, LOCATION, AND DESCRIPTION

The Laskin Poplar Oil site is 50 miles northeast of Cleveland, in Ashtabula County, Jefferson Township, Ohio, west of the village of Jefferson (estimated population 3,012 in 1986). It is southwest of the intersection of Ohio Route 307 and Poplar Street, and immediately south of Cemetery Creek (Figure 1-1).

The predominant developed land uses adjacent to the site are recreational and residential. The site is bounded on the north by a wooded ravine through which Cemetery Creek flows and the old Poplar Street right-of-way; on the south by open fields, a horse show arena, and viewing stands of the Ashtabula County Fairgrounds; on the west by a wooded area and softball fields; and on the east by Poplar Street and the county fairgrounds (Figure 1-2). East of Poplar Street, in the fairgrounds, is a horse racetrack. Although most of the recreational facilities are limited to use during the summer, a certain amount of activity occurs year round, especially in relation to operation of the racetrack and horse stables.

Several residential properties are located north of the Laskin Poplar Oil site along State Highway 307. Water for all homes within 0.5 mile of the site is obtained through the Ohio Water Service, a private water facility.

The 9-acre site contains the residence of the property owner (Mr. Alvin Laskin), a greenhouse complex, a boiler house/garage containing 4 boilers formerly used to heat the greenhouses, a smokestack, 4 in-ground oil storage pits (2 of which have been filled in previous response actions), 1 underground and 32 aboveground storage tanks, a retention pond, a freshwater pond, 2 drained ponds (ponds 18 and 19), and miscellaneous small buildings and sheds. Three small treatment ponds constructed by the U.S. EPA contractors during emergency actions are at the bottom of the south slope of Cemetery Creek and north of the retention pond.

Local stratigraphy consists of till overlying shale bedrock. The shale is weathered to a depth of approximately 8 feet. At the Laskin Poplar Oil site, groundwater in the surficial aquifer flows in the weathered shale, till, and overburden soil and discharges at Cemetery Creek. Groundwater flow in the unweathered shale is slow. On-site ponds are hydraulically connected to the groundwater. Groundwater flows out of the ponds at a steep gradient in the earthen dikes on the downgradient side of the ponds. The on-site pits and tanks are above the water table. Much of the site surface consists of fill material.

Surface elev[redacted]t or near the site range from 855 to 925 feet above mean sea level (m[redacted] elevations near the freshwater pond and tanks ranging from 915 to [redacted] msl. The lower plateau, containing the retention pond, is relatively [redacted] with elevations approximately 10 to 20 feet lower than the area of the pits and tanks. North of the retention pond, the site slopes steeply downward toward Cemetery Creek.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The greenhouses on the Laskin Poplar Oil site were in operation for approximately 80 years, beginning in the early 1890s. In the 1950s, boilers were installed to heat the greenhouses. Storage pits and tanks were installed during the 1960s to store the oil that fired the boilers, and the Poplar Oil Company continued to accept waste oil during the 1960s and 1970s. The company resold some of the waste oil and oiled gravel and dirt roads in 17 townships of Ashtabula County. In 1977, the U.S. EPA and OEPA identified PCBs in the waste oil. In 1981, a court order stopped activities at the Laskin Poplar Oil Company.

In early 1981, the United States Environmental Protection Agency (U.S. EPA) conducted an investigation at the site and detected polychlorinated biphenyls (PCBs) in groundwater and soils. In 1981 and 1982, the U.S. EPA performed several emergency actions at the site. The emergency actions included the following: two ponds, 18 and 19, were drained and regraded; surface runoff was diverted to a retention pond to prevent flooding; 302,000 gallons of waste oil was removed and taken to an off-site incinerator; 430,000 gallons of contaminated surface water was treated and discharged off-site; and 205,000 gallons of sludge was solidified.

In 1983 the site was placed on the U.S. EPA's Superfund National Priorities List (NPL) of uncontrolled hazardous waste sites. The U.S. EPA is the lead agency responsible for managing the investigation and remediation of the Laskin Poplar Oil site. The Ohio Environmental Protection Agency (OEPA) is the support agency for the Laskin Poplar Oil Superfund activities.

Remedial Investigation (RI) activities were conducted from December 1983 to November 1984. Activities included sampling of soils, sediments, oiled road surfaces, surface water, boiler and smokestack; installation of monitoring wells, and sampling of groundwater. The activities were part of the Phase I RI at the site. During the winter of 1985-1986, the potentially responsible parties (PRPs) removed approximately 250,000 gallons of waste oil and waste water, in response to an administrative order issued in August 1984.

A second administrative order was issued to the PRPs in late 1986, ordering them to develop a work plan to address the storage pits, tanks, and their contents, and soils surrounding the pits and tanks. A third administrative order issued in February 1988 ordered the PRPs to incinerate the materials in the pits, tanks and a portion of the most heavily contaminated soil. The PRPs are currently developing a design for the U.S. EPA's review and approval of this work.

A Phase II RI was conducted in fall and winter of 1987-1988. Work included geophysical studies; bathymetric surveys; installation of monitoring wells, and; sampling of groundwater, surface water, soils, and sediments. The results of the RI are briefly discussed later in this document.

Following completion of the RI, a Feasibility Study (FS) was prepared which

presented an array of alternatives to address site contamination. Eight alternatives for the Laskin Poplar Oil site were evaluated by the U.S. EPA. Based on the U.S. EPA's evaluation, a preferred alternative was proposed and presented to the public for review and comment. The proposed alternative was documented through a Proposed Plan and presented at a public meeting on April 26, 1989 in Jefferson, Ohio. This Record of Decision (ROD) documents the U.S. EPA's choice of that preferred alternative.

On April 19, 1989, the U.S. EPA sent a special notice letter to a number of PRPs. This letter notified the PRPs of their liability and responsibility in conducting the design and implementation of the U.S. EPA's preferred remedial alternative for the Laskin Poplar Oil site. Technical discussions between the U.S. EPA and the PRPs have indicated the PRPs appear to be interested in carrying out the selected alternative.

The U.S. EPA held an organizational meeting on May 10, 1989, in Cleveland, Ohio, with representatives of the PRPs, the United States Department of Justice (DOJ), the OEPA, and the U.S. EPA in attendance. At that meeting, PRP responsibilities under CERCLA Section 122 were discussed and the PRPs were encouraged to organize into a group to promote efficiency in completing the Remedial Design/Remedial Action (RD/RA) negotiations.

3.0 COMMUNITY RELATIONS HISTORY

The U.S. EPA has conducted a community relations program to keep the public informed of progress during the RI/FS for the Laskin Poplar Oil site and to discuss upcoming events. The RI was released to the public in December, 1988, and the FS and Proposed Plan were released in April, 1989. The U.S. EPA provided the public with an opportunity to comment on the U.S. EPA's preferred alternative and the other alternatives presented in the Feasibility Study during a 30 day public comment period from April 12 to May 12, 1989. During this time period, interested individuals were encouraged to review the FS and Proposed Plan and send written comments to the U.S. EPA. Individuals were also encouraged to review the Administrative Record for the site located at the County Disaster Service Offices, in the Ashtabula County Courthouse, 25 West Jefferson Street, Jefferson, Ohio; and the Ashtabula County District Library, 335 West 44th Street, Ashtabula County, Ohio. All formal reports developed by the U.S. EPA are available at these locations.

Notification of the availability of the documents was published in the following newspapers on the dates indicated:

The Asht[redacted]County Sentinel - April 17, 24;

The Jef[redacted]Gazette - April 20;

The Valley News - April 12, 19;

The Pyma News - April 12, 19.

In addition to the formal reports, the U.S. EPA distributed summary fact

sheets on the Source Removal Operable Unit (August, 1987), Remedial Investigation (March, 1989), and the Feasibility Study (April, 1989).

On April 26, 1989, the U.S. EPA held a formal public meeting at the Ashtabula County Courthouse in Jefferson, Ohio. During the meeting, the U.S. EPA made presentations to the community on topics such as: sampling results for soil, ground water, surface water, and sediment; risk assessment results; the source removal operable unit; the remedial action goals; the remedial alternatives developed in the FS; and the U.S. EPA's preferred alternative. Following the presentations, the U.S. EPA answered questions from interested parties present at the meeting.

A transcript of this meeting is included as part of the Administrative Record (see Administrative Record index, attached as Appendix A) for the Laskin Poplar Oil site. The U.S. EPA's responses to comments received during this public meeting and to written comments received during the public comment period are included in the Responsiveness Summary attached to this document.

This decision document presents the United States Environmental Protection Agency's (U.S. EPA's) selected remedial action for the Laskin Poplar Oil site located in Jefferson, Ohio. This decision document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Contingency Plan (NCP). This decision is based on information and documents contained in the administrative record for this site.

4.0 RELATIONSHIP TO THE OPERABLE UNIT OR RESPONSE ACTION

The problems at the Laskin Poplar Oil site are complex. As a result, the U.S. EPA organized the work into two operable units (OUs). The Source Removal Operable Unit (SROU) and the final operable unit. Contaminants addressed by these two operable units are:

- SROU: Addresses 6,000 gallons of residual oil, 60,000 residual gallons of wastewater, 700,000 gallons of pumpable and nonpumpable sludges, and 5,000 cubic yards (c.y.) of contaminated soil.

- Final OU: Addresses exposure to contaminated soils spread throughout the site, and in the boiler house and greenhouse areas; dioxin-contaminated debris; and groundwater directly beneath the site (chiefly underneath ponds 18 and 19).

The U.S. EPA has already selected a remedy for the SROU. The PRPs are currently in compliance with the design portion of an administrative order to design and implement a remedy for the materials addressed in the SROU. This Record of Decision (ROD) documents a remedy consistent with the SROU remedy. This final ROD, in combination with the SROU, addresses all the contaminated materials on-site.

5.0 SITE CHARACTERISTICS

The RI consisted of on-site scientific studies and laboratory analyses to determine the nature and extent of contamination at the site and affected areas. During the RI samples were taken from surface and sub-surface soils; surface water; sediments; groundwater; residential wells; and soils, ash, and debris from inside the boiler house. The RI report for the Laskin Poplar Oil site was completed in December 1988. The results of the RI are summarized below.

Contamination and Affected Media:

Eighty-two organic chemicals and twenty-four inorganic chemicals on the U.S. EPA's Hazardous Substances List (HSL) were detected in the various media at the site (Table 5-1). The organic substances were grouped by analytical class (VOCs, semivolatile organic compounds, pesticides, PCBs). Inorganic substances were evaluated individually, since they do not exhibit the functional similarities of organic chemicals. The chemicals and their associated characteristics are listed in Table 5-2.

5.1 Groundwater

The nature and extent of groundwater contamination was defined at the site (Figure 5-1). The study identified two aquifers beneath the site that flow north towards the Cemetery Creek. The shallow aquifer is composed of combined fill/till and broken shale. The deeper aquifer is characterized by unbroken shale. The two aquifers appear to be poorly connected, with little flow evident from the shallow aquifer into the deeper aquifer. The estimated volume of contaminated groundwater in the aquifer presenting an unacceptable risk (based on 10% porosity) is 650,000 gallons.

Groundwater contamination was detected in the shallow aquifer beneath pond 19. Halogenated alkanes, ketones, and polynuclear aromatic hydrocarbons (PAHs) were detected in the shallow aquifer.

Organic contaminants were detected at low levels (<30 ug/l) downgradient between the site and Cemetery Creek. Groundwater collected upgradient of the site contained no detectable concentrations of HSL organic compounds. Several HSL organic compounds were detected in the deep aquifer groundwater at low concentrations (<10 ug/l). However, the occurrence was sporadic and the contamination is thought to be the result of laboratory or bottle contamination. Groundwater in the deeper aquifer does not appear to be significantly contaminated. Analytical results indicate that the residential wells near the site have not been affected by site groundwater contamination.

5.2 Surface Water and Sediment

Surface water analytical results from the on-site retention pond and fresh water pond did not detect contaminant concentrations above any water quality standards. Sampling indicated sediments from the ponds are contaminated

with PAHs, PCBs, benzene, toluene, and xylenes (Figure 5-2).

Surface water samples from Cemetery Creek did not detect any HSL contaminants. However, sediments in the creek were contaminated with PAHs at similar concentrations both upstream and downstream of the site, which suggests that the contaminants in the sediment are not solely the result of activities at the Laskin Poplar Oil site.

5.3 Soil

Soil contamination is present throughout the site, with PAHs and PCBs being the most prevalent contaminants. Lead is the only inorganic chemical of concern above background levels in the on-site soil, excluding soil within structures, attributable to the activities of the Laskin Poplar Oil Company (Figure 5-2). On-site soil samples for polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzo-p-furans (PCDF) contained less than 1 part per billion (ppb) of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (TCDD) equivalents. Under U.S. EPA guidance, no action is called for if the TCDD equivalent level is under 1 ppb. The areas where soil contamination is concentrated are near the pits, ponds 18 and 19, and the retention pond. The highest concentrations occur at the pit bottoms, 15 to 25 feet, and continue to a depth of approximately 40 feet.

Numerous off-site samples were also taken to establish background levels and contaminant migration. Results did not indicate that off-site soils have been affected by site activity.

5.4 Structures

Soil samples from the boiler house floors, boilers, and smoke stack are contaminated with PAHs, PCBs, dioxin, and inorganic compounds, primarily lead and zinc. It is assumed that the boiler house itself is also contaminated with similar compounds, including dioxin resulting from operations of the boiler house. The ash and residues still in the boiler and smokestack contain several inorganic chemicals at concentrations several orders of magnitude above background and dioxin concentrations up to 65 ppb of 2,3,7,8-TCDD equivalents.

Analytical results from the greenhouse soils are contaminated primarily with PAHs and pesticides, at concentrations of about 1,000 ug/kg and 2,000 ug/kg respectively. The pesticides could be attributed to previous greenhouse operations rather than Laskin Poplar Oil Company activity.

5.5 Air

On-site air [redacted]ng and monitoring was conducted during the first phase of the RI for t[redacted]e, but not conducted during the Phase II RI field activity. Interpretatio[redacted] the results indicated that on-site or off-site air contamination would not occur unless there is a substantial surface

disturbance of the site. During the construction phase of the remedy, controls will be implemented to minimize exposure. Inhalation risks are discussed in Section 6.2.4.

6.0 SUMMARY OF SITE RISKS

The U.S. EPA conducted a risk assessment to determine if the site poses potential effects on public health and the environment. The risk assessment was developed in accordance with U.S. EPA procedures, as outlined in the Superfund Public Health Evaluation Manual (SPHEM; U.S. EPA 1986g). The study concluded that the site could pose a significant risk to human health through direct contact with, incidental ingestion, or inhalation of on-site contaminated soils; direct contact with, incidental ingestion, or inhalation of media inside the boiler house, and; ingestion of contaminated groundwater.

6.1 Introduction

Contaminants of Concern

The risk assessment did not use the indicator selection process suggested in the SPHEM. Instead, all known contaminants at the site were reviewed to determine whether they had environmental criteria or critical toxicity values (i.e., cancer potency factors, reference dose values, aquatic life protection criteria, drinking water health advisories, or other drinking water standards). If the contaminants were subject to these values or criteria, they were selected for evaluation in the health assessment. The contaminants of potential concern for the Laskin Poplar Oil site are listed in Table 6-1.

Not every chemical reviewed had a critical toxicity value or an environmental criterion. However, the chemicals that did not have such values or criteria occurred infrequently with no uniform distribution on-site or off-site. Review of the data indicated that omission of those chemicals from the quantitative risk evaluation would not substantially alter the conclusions of the risk assessment.

6.2 Exposure Assessment

The contaminants of concern identified in various environmental media during the RI were evaluated to determine the level of risk they pose to public health and the environment. The risk assessment identified various potential exposure scenarios for contaminants at the Laskin Poplar Oil site. The potential risks associated with each scenario are presented below. Table 6-2 summarizes the current scenarios evaluated in the risk assessment and the associated risks.

Figures 6-1 and 6-2 illustrate exposure pathways for current and future land use that were evaluated in the risk assessment for the site.

6.2.1 Ingestion of Ground Water

The risk assessment made the conservative assumption that the groundwater

would be used for a water supply because there are no legal restrictions for groundwater use. The risks associated with future groundwater use resulting from site and area development were estimated based on the Phase II groundwater monitoring well data.

Under this assumption, the assessment identified a potential risk from drinking site ground water. The plume of contaminated groundwater is limited to the area shown in Figure 5-1. Contaminated groundwater has not migrated off-site and is not threatening any private groundwater supplies in the area. Ground water in this area contains PAHs, halogenated alkanes, and ketones. Certain levels detected exceed the U.S. EPA's Maximum Contaminant Levels (MCLs) for drinking water (Table 6-3). Therefore, consumption of the groundwater does pose a risk to human health.

The risk evaluation for groundwater ingestion is summarized by individual monitoring well in Table 6-4. Groundwater in monitoring wells where carcinogens were detected caused excess lifetime cancer risks ranging from $2x10^{-2}$ to $1X10^{-6}$. Non-carcinogenic hazard indices ranged from less than 1 to 61.

Although these risks are significant, exposure is unlikely to occur at this time. Ground water on-site is currently not used as a drinking water source and will be drained within 2 years as part of the remedy for the site. Residents in the area are connected to a municipal water supply and will not be impacted by the dewatering activity. The combination of diversion trench and cap over the site will virtually eliminate any further generation of contaminated groundwater.

6.2.2 Ingestion of Surface Water

Individuals may be exposed to contaminants released to the surface water on-site (the freshwater and retention ponds) or adjacent to the site at Cemetery Creek. Exposures may result from children trespassing on the site or playing in the creek.

The risks associated with incidental ingestion of water from the ponds are summarized on Table 6-6. The risks to trespassers who may ingest surface water from the retention or freshwater ponds are very limited. Carcinogens were not detected in water from either pond. The estimation of noncarcinogenic risk indicated that the hazard indices for either exposure are much less than one.

The risk associated with ingestion of creek water is also shown on Table 6-6. Organic and inorganic contaminants attributable solely to the site were not detected in the waters of Cemetery Creek. Potential groundwater discharge to Cemetery Creek was estimated and risks for exposure to contaminants were evaluated. Because some of the estimated values were below the U.S. EPA Contract Laboratory Program (CLP) Routine Analytical Service (RAS) detection limits, risks were also estimated assuming contaminant levels at detection limits to yield a conservative estimate of exposure levels.

Exposure to the creek is assumed to be infrequent. Risks associated with carcinogens range from $1x10^{-7}$ to $4x10^{-8}$ for the Routine Analytical Service (RAS) detection limit and maximum predicted concentrations, respectively. The hazard index is less than one for both sets of concentrations.

The discharge of contaminants to the creek could result in the exposure of aquatic organisms in the creek. The makeup of the aquatic community in the creek is not known, but the creek is classified as a limited warm water habitat by the OEPA. Because the effluent from the Jefferson Wastewater Treatment Plant constitutes most of the flow during dry weather, factors related to the discharge of treated effluent may limit the aquatic population. Because of the limitations to the aquatic populations in the creek, people probably do not fish the creek frequently. If people do fish the creek, it is unlikely that they will catch and consume substantial amounts of fish.

In summary, the risk assessment indicated that although there are mechanisms for release of contaminants to Cemetery Creek, the potential exposures that result may not pose substantial risk. The assessment concluded that:

- Because no contaminants associated with the site were detected at the creek, there were no current measurable impacts from the site at the creek.

- Based on concentrations projected at the creek in the future, noncarcinogenic risks for trespassers (site residents are assumed to be aware of the risk incurred by consuming creek water) were below levels of concern, cancer risks for trespassers were less than $4x10^{-8}$, and neither federal water quality criteria or State water quality standards are exceeded at the completion of the remedial action.

6.2.3 Ingestion of Contaminated Soils

The risk assessment evaluated three soil exposure settings: exposures of site trespassers under current site use; exposure of construction workers during future site development; and exposure of current and future residents. These uses could result in persons coming into direct contact with contaminants in the soil and being exposed through the soil ingestion and dermal absorption routes of exposure.

The U.S. EPA has not developed standard soil ingestion exposure assumptions as it has for drinking water exposures. Information on soil ingestion exposures was reviewed and representative soil ingestion rates were selected. These exposure scenarios and ingestion rates are presented in Section 6.5.

Dermal absorption is also a potential exposure route associated with soil contact. Calculations in the risk assessment indicated exposures through dermal absorption were two orders of magnitude less than exposures through soil ingestion. Because of this, risks associated with soil ingestion were assumed to be representative of direct contact soil exposures.

Access to the site is not currently restricted, and accordingly a trespassing individual (including children) could reach the site and ingest contaminated soil. Risks to site residents and construction workers were also calculated.

The risk assessment identified a potential risk from ingesting contaminated soils at the Laskin Poplar Oil site. Carcinogenic risk reaches a high of $2x10^{-3}$ to a resident in the boiler house who ingests soil from 0 to 14 feet with the highest detected concentrations of PAHs and PCBs. This same soil provided the highest cumulative noncarcinogenic HI at 10,000 due to consumption of soil containing inorganic contaminants (residential child—worst case scenario).

Soil and sediment ingestion risks under the three different scenarios (residential, trespass, and construction) are summarized in Table 6-5.

6.2.4 Airborne Contaminant Inhalation

On-site exposures under current land use conditions may include risks from the inhalation of volatilized or resuspended contaminants. The presence of contaminants in surface soil, sub-surface soil, and groundwater presents the potential for inhalation exposures. Inhalation risks for trespassers were calculated separately for exposures to volatilized and resuspended contaminants.

Airborne contaminant concentrations at the site boundaries were assumed to be equivalent to airborne concentrations on-site. Risks were calculated for a 70kg adult who is exposed for 12 hours/day, 7 days/week, for 20 years. Exposure was assumed to occur during the summer months when predicted concentrations from volatilization were at the highest levels. Cumulative risk levels reached highs of $1x10^{-6}$ for inhalation of volatilized contaminants (vinyl chloride, methylene chloride) and $2x10^{-7}$ for inhalation of resuspended material by a site boundary resident.

Table 6-6 summarizes risk from ambient air inhalation.

6.3 Toxicity Assessment

The assessment addressed contaminants in terms of two categories of toxicity; carcinogenic and noncarcinogenic health effects. Carcinogenic Potency Factors (CPFs) and Reference Dose Factors (RfDs) for chemicals detected at the site are presented in Table 6-7 and Table 6-8, respectively.

6.4 Summary [redacted] Characterization

The risk assessment for the Laskin Poplar Oil site did not address the total risk associated with the site. Firstly, standards or critical toxicity values do not exist for every chemical detected at the site. Secondly, all exposure pathways and their associated routes of exposure could not be quantified.

The adverse potential risks associated with the site are summarized below.

Surface Water

- Although there are pathways for the release of contaminants to Cemetery Creek, the potential exposures do not appear to pose an unacceptable risk. Based on concentrations projected at the creek, trespassers are at an excess cancer risk level less than $4x10^{-8}$, and releases of groundwater into Cemetery Creek are not predicted to exceed any federal AWQCs or State Water Quality Standards.

Groundwater

- There are no current exposures associated with groundwater, but if residential wells were installed on-site, residents would be exposed to a excess lifetime cancer risk ranging from $2x10^{-2}$ to $1x10^{-6}$, and concentrations of noncarcinogens at levels that exceed their respective RfDs.

Soil and Sediment

- Trespassers could be exposed to PCDD/PCDF, PAHs, and PCBs in surface soil that could yield an excess lifetime cancer risk of $2x10^{-6}$.

- Trespassers in the boiler house could be exposed to PCDD/PCDF contamination that could yield an excess lifetime cancer risk of $2x10^{-4}$.

- Boiler house soil has lead concentrations of 212,000 mg/kg that could cause trespassers to intake lead at over 400 times the RfD.

- Trespassers in the greenhouse could be exposed to excess lifetime cancer risks of $4x10^{-7}$ to $3x10^{-7}$ from PAHs and dieldrin.

- Contact with retention pond sediment and seeps by trespassers could yield excess lifetime cancer risks of $3x10^{-5}$ due to PAH and PCB contamination.

- Construction activities at the site could lead to excess lifetime cancer risks of $3x10^{-6}$ from contact with PAHs and PCBs in surface and [redacted]rface soil.

- Fu[redacted]e residents could be exposed to PAH and PCB co[redacted]ion that yields excess lifetime cancer risks of $2x10^{-3}$ to [redacted] based on contaminants present at 0 to 2 feet and $2x10^{-3}$ to $1x10^{-4}$ based on contaminants present at 0 to 14 feet.

- Contact with contaminated surface soil could be a potential exposure route to animals, although specific animal risks were not quantified.

Air

- There is no current unacceptable risk associated with ambient air inhalation at the site. The excess lifetime risk associated with ambient air inhalation at the site ranges from $1X10^{-6}$ to $5x10^{-8}$. The noncarcinogenic hazard index is less than one.

Limitations and Assumptions

The risk assessment is subject to uncertainty from a variety of sources including:

- Sampling and analysis
- Fate and transport estimation
- Exposure estimation
- Toxicological data

Uncertainty factors in the risk assessment due to uncertainty common to risk assessments in general are summarized in Table 6-9. Uncertainty factors in this particular site's risk assessment are summarized in Table 6-10.

6.5 Analytical Methods

General

The risk assessment calculated doses for those contaminants of concern found on-site at concentrations higher than background. Noncarcinogenic risks were estimated by calculating a Hazard Index (HI), the ratio of the exposure dose to the acceptable chronic intake. Cancer risks were estimated by multiplying the average lifetime exposure dose by the CPF.

In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. The RfD is generally expressed in units of milligrams per kilogram of body weight per day (mg/kg/day).

The HI approach assumes dose additivity, which means that the estimated daily intake of each chemical is divided by its RfD and the resulting quotients are summed. The resulting sum is the HI. Any single chemical with a daily intake greater than the RfD will cause the HI to exceed unity. Of course, the hazard index can exceed unity even if no single chemical exceeds its RfD. When the HI exceeds one, there may be concern for a possible noncarcinogenic health risk.

The dose-response relationship for carcinogens is expressed as a CPF or slope factor. CPFs are presented in units of the inverse of milligrams of chemical per kilogram of body weight per day. The approach used by the U.S. EPA to estimate the CPF from animal studies or human data assumes a dose-response relationship with no threshold.

The potential for carcinogenic effects is evaluated by estimating excess lifetime cancer risk. Excess lifetime cancer risk is the incremental increase in the probability of developing cancer over the background probability (i.e., if no exposure to site contaminants occurred). For example, a $1X10^{-6}$ excess lifetime cancer risk means that for every 1 million people exposed to the carcinogen throughout their lifetimes, the average incidence of cancer is increased by one extra case of cancer.

Groundwater

The risk assessment assumed that a 70-kg adult would drink 2 liters of groundwater per day over a 70-year lifetime.

Surface Water

The chemical concentration in Cemetery Creek was estimated using a four-step process:

1. The site was divided into three distinct areas of flow (flow tubes), each characterized by a representative discharge and concentration.

2. The average discharge was determined for each flow tube.

3. A representative concentration for each chemical detected was determined for each flow tube, and the estimated chemical mass loading from each flow tube to Cemetery Creek was calculated.

4. The resultant chemical concentration in Cemetery Creek was determined.

Soil

Probable average case doses for exposure were calculated based on ingesting 0.1 g/day of soil containing average contaminant levels. Worst case doses were calculated based on ingesting 1.0 g/day of soil containing maximum contaminant levels. The risk assessment used the resulting doses to estimate potential risks.

To evaluate exposures associated with trespassing, the risk assessment assumed that site visits by an individual (70 kg adult, 35 kg child) would be 2 days per week, 16 weeks of the year (summer months) for 10 years.

Ingestion exposure calculations for a site resident assumed a body weight of 70 kg, daily intake, 70 year lifetime, and 70 year, full-time exposure.

Exposure calculations for construction workers assumed a 70 kg worker would be ingesting contaminated soil for 8 hours/day, 5 days/week, for a period of 1 year.

Air

No quantitative on-site ambient air quality sampling was performed during the Phase II RI, and the inhalation exposure is based entirely upon modeling efforts.

Possible release mechanisms include volatilization of organic compounds from the subsurface and mechanical resuspension of both organic and inorganic compounds in the surface soil.

The risk assessment assumed that the volatile contaminant levels in the subsurface were at equilibrium between the pore air, the soil, and the groundwater for estimating the release of VOCs.

The assessment assumed the airborne concentration of respirable suspended material was 100 ug/m^3. It was further assumed that all of the airborne material was derived from the surface soil at the site. The resulting airborne concentrations of contaminants were the product of the surface soil concentration and a mass loading of 100 ug/m^3.

6.4 Potential Future Risks

Although the site is not operating, there is no site development, and groundwater is not being used for drinking water purposes, there is still a potential threat of future contaminant releases that may endanger public health and the environment. A major remedial action objective for the site is to reduce this threat of future contaminant releases in addition to reducing current risks identified in the risk assessment. Several factors contribute to the potential threat of future releases.

The major concern of the site are the source waste oils contained in pits and tanks. This major concern is being addressed as part of the Source Removal Operable unit (see Section 4.0). This second remedial action deals basically with the residual contamination contained in soils, sediments, groundwater, and the boiler house area.

7.0 DOCUMENTATION OF SIGNIFICANT CHANGES

This Record of Decision selects Alternative 3A, as described in the Proposed Plan, as the preferred remedial alternative for the Laskin Poplar Oil site. the U.S. EPA has reviewed and responded to all comments received from the interested p[redacted], including those from the State and neighboring communities, [redacted] the public comment period. Comments were made on Alternative [redacted] other remedial alternatives. Based on the public comments, th[redacted] EPA has determined that there is no need for any significant changes to Alternative 3A.

In the event that additional data or information during the design of the remedy reveals the need for a modification, the U.S. EPA will notify the public of any changes to the remedy presented here in this Record of Decision.

8.0 DESCRIPTION OF ALTERNATIVES

The U.S. EPA identified potential risks that should be addressed by remedial response actions at the Laskin Poplar Oil site. These risks are associated with: direct contact with, incidental ingestion or inhalation of contaminated soils and certain sediments on-site; direct contact with, incidental ingestion or inhalation of contaminated soils in the greenhouse area; direct contact with, incidental ingestion or inhalation of contaminated soils and ash in the boiler house, and ingestion of on-site contaminated ground water.

The FS identified technologies that could eliminate or reduce the risks for each of these media. These medium-specific technologies were screened based on compatibility with waste and site characterization. The surviving technologies were then assembled into site-wide remedial alternatives. The FS then evaluated the alternatives based on protectiveness; long and short-term effectiveness; meeting applicable, relevant, and appropriate requirements; reduction in toxicity, mobility, or volume; implementability, and cost. This evaluation process was carried out according to procedures specified by the U.S. EPA in CERCLA, SARA, the NCP, and the U.S. EPA guidance documents including Interim Guidance on Superfund Selection of Remedy (OSWER Directive No. 9355.0-19, December 24, 1986) and Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (OSWER Directive No. 9355.3-01, October, 1988).

The alternatives to reduce site risks that are evaluated in detail include a no action alternative, and eight other alternatives. The eight other alternatives range from one which relies upon containment of waste, with little or no treatment, up to an alternative that relies almost completely upon treatment, to reduce site risks. The FS looked at alternatives involving treatment in order to reduce the toxicity, mobility, or volume of site wastes.

Each of the eight remedial alternatives evaluated in detail is described briefly below. The descriptions include containment components, treatment components, institutional controls, estimated time for implementation, cost (estimated to two significant figures), overall protection, and compliance with applicable or relevant and appropriate requirements (ARARs). Section 9.0, which describes the comparative analysis of the alternatives, supplies additional detail on these subjects.

8.1 Alternative 1

The U.S. EPA is required to evaluate a "No Action" alternative. Under this alternative, there would be no further site remediation performed beyond the waste materials addressed in the Source Removal Operable Unit. No additional costs or time would be required beyond the source removal action.

Institutional controls and use restrictions would be imposed to prohibit site use, land development, and ground-water extraction. Access restrictions would also be enforced to prevent any interference or vandalism at the site.

The U.S. EPA would recommend that on-site residents temporarily relocate during construction of the remedy for safety reasons. Stringent measures would be taken to ensure the health and safety of workers on-site as well as the local residents near the site.

Alternative 2 relies mainly on containment, institutional controls, and monitoring. Containment of soil prevents exposure to contaminated soils. Restricting ground-water use on-site would be effective in eliminating risks from drinking this ground water. Fencing would restrict access to the site. Potential future risks, as described in Section 6.3, would be reduced. However, Alternative 2 allows further generation of contaminated groundwater by potential release of contaminants in soil. Further, Alternative 2 does not meet State of Ohio closure requirements for solid or hazardous waste landfills, which has been identified as an ARAR.

The costs of Alternative 2 and the estimated time for implementation are as follows:

Capital Cost:	$ 3,300,000
Present Worth O & M Costs:	$ 1,400,000
Total Costs:	$ 4,700,000
Time to Implement:	1 year

NOTE: The estimated total present worth of the alternatives described in Sections 8.3 through 8.8 do not take into account the planned activities from the Source Removal Operable Unit activity currently under design by the PRPs. Significant cost savings can be made if the planned incineration of the waste oils, sludge, and saturated soils take place at the same time the final remedial alternative is implemented. The total costs for alternatives 3 through 6 which involve thermal treatment of soils and dioxin-contaminated material, can be reduced by approximately $3,000,000 to $4,000,000. The reduction in cost is based on site preparation, mobilization, and demobilization of the incinerator.

8.3 Alternative 3A

Alternative 3A has the same components as Alternative 2 with the exception of the soil cover. Additionally, Alternative 3A incorporates a groundwater control syst[redacted] thermal treatment of dioxin-contaminated material.

The groundwa[redacted]trol system is a combination of a multi-layer cap and groundwater [redacted]n trench up-gradient from the site. The diversion trench would collect [redacted]radient groundwater and re-direct the groundwater around the site and discharge to Cemetery Creek where it would continue its normal flow pattern. This diversion trench would prevent regional groundwater from passing through contaminated soils. The multi-layer cap would significantly reduce infiltration of surface water into the contaminated soils. Together, these two technologies would virtually eliminate further generation of

contaminated groundwater and effectively de-water the site. Safe Drinking Water Act (SDWA) MCLs would not apply to the remedy because the groundwater in the shallow aquifer beneath the site would be virtually eliminated.

The multi-layer cap would be placed over soils with greater than $1x10^{-6}$ excess lifetime cancer risk levels and a total hazard index greater than one. Prior to cap installation, a detailed geotechnical investigation would be conducted to measure the properties of the soil and clay used to construct the cap. The purpose of this investigation would be to determine the stability of these materials under flood conditions. The cover would then be constructed with side slopes flat enough to protect the contained area from damage due to flooding. In addition, the cap would be constructed, operated, and maintained to ensure its performance in containing contaminated soils. This alternative does meet Ohio closure requirements for solid waste landfills and requirements for landfill closure outlined under 40 CFR §264.310. The cap would be designed and constructed to promote drainage, minimize the erosion of the cover, and provide long-term minimization of migration of liquids through the underlying contaminated soils.

Alternative 3A incorporates treatment of source material. The contaminated soil to be treated contains dioxin and RCRA-listed wastes (including, but not limited to, K035, F001, and F005). Dioxin-contaminated soil, ash, and debris would be incinerated on-site by a mobile incinerator. Approximately 300 c.y. of dioxin-contaminated material from the boiler house area would be incinerated. The residue ash would be tested for hazardous constituents, and hazardous characteristics (RCRA characteristic waste tests). Analytical results would be compared to the U.S. EPA's delisting criteria. If levels do not exceed the delisting criteria, the residue ash would be disposed of on-site beneath the cap. If the ash does not meet the delisting criteria, the ash would be disposed of off-site in a RCRA hazardous waste facility. The ash would be required to meet the treatment standards specified in the Land Disposal Restrictions (40 CFR Part 268) for any restricted RCRA-listed waste (including, but not limited to, K035, F001, and F005) it contained prior to disposal off-site.

Dioxin-contaminated structures would be dismantled and decontaminated or thermally treated. Dioxin material that could not be decontaminated or incinerated, would be stored on-site in a concrete vault as described under Alternative 2.

Alternative 3A incorporates the ground-water monitoring, surface water monitoring, [redacted] restrictions already described under Alternative 2.

The costs of [redacted]native 3A and the estimated time to implement this alternative [redacted]

Capital Cost:	$ 10,000,000
Present Worth O & M Costs:	$ 1,300,000
Total Costs:	$ 11,000,000
Time to Implement:	2 years

8.4 Alternative 3B

Alternative 3B has the same components as alternative 3A except that the contaminated groundwater is addressed in a different manner. Alternative 3B provides a permeable soil cover rather than an impermeable multi-layer cap over. The soil cover would allow rainfall to percolate through the contaminated soils and enter groundwater. A groundwater collection trench would be installed downgradient from the site rather than a diversion trench as described in Alternative 3A. The trench would collect groundwater flow passing through the site. Groundwater would then be treated and discharged to Cemetery Creek, at levels below that required to maintain AWQCs in Cemetery Creek.

A combination of air stripping and activated carbon would be used to treat a flow rate estimated at 5 gallons per minute. Total volume of contaminated groundwater with contaminant concentrations that result in risk above the $1x10^{-6}$ level is (based upon 10% porosity) 650,000 gallons. The groundwater treatment system would be designed to produce effluent that meets the discharge standards of the required National Pollutant Discharge Elimination System (NPDES) permit. Groundwater and surface water monitoring would be performed. Influent and treated groundwater effluent would be monitored regularly as required per the NPDES permit.

Based upon the predicted rate of contaminant movement and the alignment of the groundwater collection system, the time required to reduce contaminant levels in the groundwater to below MCLs is estimated to be greater than 50 years.

The soil cover would consist of a well-compacted, low-permeability cover at least 24 inches thick. The soil cover would be placed over the same area of contaminated soils as previously described in alternative 3A. This top soil layer would be planted with grass. However, the soil cover would not meet Ohio closure requirements for solid waste landfills.

The costs and time to implement Alternative 3B are listed below:

Capital Cost:	$ 8,700,000
Present Worth O & M Costs:	$ 2,100,000
Total Costs:	$ 11,000,000
Time to Implement:	2 years

8.5 Alternati[redacted]

Alternative [redacted]ntical to Alternative 3A, except that a volume of highly contaminated [redacted] thermally treated along with the dioxin-contaminated material. Con[redacted]nated soils that exceed 10^{-3} excess cancer risk levels, approximately equivalent to 3,000 c.y., would be thermally treated.

Contaminated soils in excess of 10^{-3} excess cancer risk were defined in the RI. These soils are contaminated primarily with PAHs, PCBs, and lead. Incineration would be effective in destroying the organic contaminants in

soil. However, incineration would not address the lead or any heavy metals contained in soils.

The residue ash would be tested for hazardous constituents, and hazardous characteristics (RCRA characteristic waste tests). Analytical results would be compared to the U.S. EPA's delisting criteria. If levels do not exceed the delisting criteria, the residue ash would be disposed of on-site beneath the cap. If the ash does not meet the delisting criteria, the ash would be disposed of off-site in a RCRA hazardous waste facility. The ash would be required to meet the treatment standards specified in the Land Disposal Restrictions (40 CFR Part 268) for any RCRA-listed waste (including, but not limited to, K035, F001, and F005) it contained prior to disposal off-site. Off-site disposal of 3000 c.y. of residue ash would increase the total cost of this alternative by $1,200,000. As in Alternative 3, ash resulting from the incineration of dioxin-contaminated soil, ash, and debris may require disposal to an off-site RCRA hazardous waste facility (if not delistable). Off-site disposal would cost an additional $ 120,000.

The costs and time to implement Alternative 4A are as follows:

Capital Costs:	$ 12,000,000
Present Worth O & M Costs:	$ 1,300,000
Total Costs:	$ 13,000,000
Time to Implement:	2 years

8.6 Alternative 4B

Alternative 4B is identical to Alternative 3B, except that a volume of highly contaminated soil is thermally treated along with the dioxin-contaminated material. Contaminated soils that exceed 10^{-3} excess cancer risk levels, approximately equivalent to 3,000 c.y., would be thermally treated.

The costs and implementation time for Alternative 4B are as follows:

Capital Costs:	$ 11,000,000
Present Worth O & M Costs:	$ 2,100,000
Total Costs:	$ 13,000,000
Time to Implement:	2 years

8.7 Alternative 5A

Alternative 5A is identical to Alternative 4A, except that a greater volume of soil would be incinerated. Alternative 5A defines a volume of soil equivalent to the 10^{-4} excess cancer risk level. This results in a volume equivalent to approximately 37,000 c.y.

As in alternative 4, residue ash has the potential of not passing the U.S. EPA's delisting criteria for hazardous waste. Under Alternative 5A, approximately 6,000 c.y. has the potential of exceeding the delisting criteria. This amount of residue ash would still be considered hazardous waste and therefore would require off-site disposal to a RCRA hazardous waste

facility. Off-site disposal of 6,000 c.y. would increase the total cost of the alternative by about $2,400,000. The remaining 31,000 c.y. would most likely pass the delisting criteria and then qualify for on-site disposal beneath the cap.

The costs and implementation time for Alternative 5A are as follows:

Capital Costs:	$ 32,000,000
Present Worth O & M Costs:	$ 1,000,000
Total Costs:	$ 33,000,000
Time to Implement:	3 years

8.7 Alternative 5B

Alternative 5B is identical to 4B except that a greater volume (37,000 c.y.) of contaminated soils is treated as in alternative 5A.

The costs associated with Alternative 5B are as follows:

Capital Costs:	$ 31,000,000
Present Worth O & M Costs:	$ 2,100,000
Total Costs:	$ 33,000,000
Time to Implement:	3 years

8.8 Alternative 6

This alternative would incinerate all soils exceeding the 10^{-6} excess cancer risk level, equivalent to approximately 57,000 c.y. Retention and fresh water ponds would be drained and back filled with clean soil material as described in Alternative 2. Surface water from the ponds would be discharged to Cemetery Creek. All contaminated structures on-site would be demolished, decontaminated or thermally treated, and disposed of off-site in a sanitary landfill. Dioxin-contaminated structures would be decontaminated and disposed of off-site in a sanitary landfill. Those materials which can not be decontaminated or treated would be disposed in an on-site concrete vault and capped in accordance to RCRA storage requirements for hazardous waste.

Incinerated dioxin-contaminated soil, ash, and debris, would be disposed of on-site, assuming ash is delistable. If ash is not delistable, the ash would be disposed in an off-site RCRA hazardous waste facility at an additional cost of $120,000.

Alternative [redacted] that all soils exceeding the 10^{-6} excess cancer risk level, appro[redacted] 57,000 c.y., be removed and thermally treated on-site. Residue ash w[redacted] disposed of on-site assuming the ash is delistable and rendered non-h[redacted]rdous. If ash is not delistable, then ash would be disposed in an off-site RCRA hazardous waste facility. As in Alternative 4, approximately 6,000 c.y. of residue ash has the potential of failing the U.S. EPA's delisting criteria for the Extraction Procedure Toxicity Test due to the lead content in soils. However, an additional 9000 c.y. of residue ash has the potential of exceeding the standard for direct contact and incidental

ingestion for lead. Thus 15,000 c.y. of ash may require containment or off-site disposal. This alternative does not provide a cover, therefore off-site disposal would be required for the ash. The off-site disposal of about 15,000 c.y. of residue ash would increase the total costs of this alternative by approximately $6,000,000.

Under Alternative 6 the site would be regraded with clean material to allow proper site re-vegetation and drainage. No groundwater diversion or collection trench would be required since all sources of contamination would be removed. However, groundwater encountered or collected during the excavation of soils would be treated and then discharged to Cemetery Creek. This alternative allows groundwater to flow unrestricted towards Cemetery Creek. Groundwater and surface water monitoring would be conducted to assess quality of groundwater discharging into Cemetery Creek.

Institutional controls and access restrictions would be imposed on the property until dioxin-contaminated material in vault is removed for final treatment and disposal. The estimated costs for this alternative are as follows:

Capital Cost:	$ 41,000,000
Present Worth O & M Costs:	$ 1,000,000
Total Costs:	$ 42,000,000
Time to Implement:	4 years

9.0 SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

The U.S. EPA used the following nine criteria to evaluate each of the alternatives identified in the FS report. The remedial alternative selected for the site must represent the best balance among the evaluation criteria.

1. Overall Protection of Human Health and the Environment addresses whether a remedy adequately protects human health and the environment and whether risks are properly eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. Compliance with Applicable or Relevant and Appropriate Requirements addresses whether a remedy meets all State and federal laws and requirements that apply to site conditions and cleanup options.

3. Long-term Effectiveness and Permanence refers to the ability of a remedy to reliably protect human health and the environment over time once cleanup goals have been met.

4. Reduction of Toxicity, Mobility, or Volume are three principal measures of the overall performance of an alternative. The 1986 Superfund Amendments and Reauthorization Act (SARA) emphasizes that, whenever possible, the U.S. EPA should select a remedy that will permanently reduce the level of toxicity of the contaminants

at the site, the spread of contaminants away from the site, and the volume, or amount, of contaminants at the site.

5. Short-Term Effectiveness refers to the likelihood of any adverse impacts to human health or the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

6. Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the remedy.

7. Cost includes capital and operation and maintenance costs of implementing a remedy.

8. State Acceptance indicates whether, based on its review of the RI, EA, FS, and Proposed Plan, the State of Ohio (OEPA) concurs with, opposes, or has no comment on the alternative the U.S. EPA is proposing as the remedy for the site.

9. Community Acceptance indicates whether the public concurs with the remedy presented in the U.S. EPA's Proposed Plan.

9.1 Overall Protection of Human Health and the Environment

With the exception of the no-action alternative (Alternative 1), each alternative would protect human health and the environment.

Alternative 6 would eliminate known risks identified in the RI. It would prevent exposure to the contaminated soil and prevent or minimize future release of contaminants to groundwater and the creek. The thermal treatment technologies to be employed would be very reliable. Use restrictions would not be required to achieve protection goals over the long term. However, use restrictions would be necessary prior to removal of the concrete vault.

Alternatives 3A, 4A, and 5A would prevent direct contact with or ingestion or inhalation of contaminated soil by containing it with a multi-layer cap, whereas Alternatives 2, 3B, 4B, and 5B would provide that protection using a soil cover. Alternatives 3, 4, 5, and 6 would treat incrementally greater amounts of soil. Alternatives that treat greater amounts of soil (4, 5, and 6) would be no more protective given that restrictions on land use are still required.

The level of protection against contaminated groundwater is differentiated between alternatives that include groundwater control ("A" alternatives), those that include groundwater collection ("B" alternatives), and those with no action taken on groundwater other than use restrictions (Alternatives 2 and 6). Assuming no action were taken other than use restrictions, the remaining potential risk would be minor since the aquifer has poor characteristics for use as a drinking water source and because local residents use municipal water. Alternatives that include groundwater control

would provide additional protection from contaminants in groundwater by eliminating groundwater above the unweathered shale. Groundwater collection alternatives would provide additional protection by collecting and treating all groundwater. Over time this would also reduce the levels of contaminants in the soils on-site.

Alternative 2 would manage most of the risks identified in the RI, but would not be fully protective because the groundwater would not be controlled or collected and treated. The cover would prevent exposure to the contaminated soil. Draining and back-filling the ponds would reduce future release of contaminants to groundwater by reducing infiltration. Institutional controls and access restrictions would prevent excavation of contaminated soil and debris. The concrete vault would reduce direct contact with dioxin-contaminated soil and debris.

Under Alternative 1, no remedial action would be conducted at the site, and therefore risk to human health and the environment as identified in the risk assessment would not be reduced. As this alternative is judged to not be protective of human health and the environment, Alternative 1 will be dropped from further consideration or discussion.

9.2 Compliance with Applicable or Relevant and Appropriate Requirements

Alternatives 2, 3A, 3B, 4A, 4B, 5A, and 5B would achieve the requirements of health-based TBC criteria for soil by using a cover to prevent direct contact with contaminated material. The soil cover in Alternatives 2, 3B, 4B, and 5B would not comply with RCRA requirements or OEPA requirements for a closure cap because of the potential higher permeability of the cover soil than the underlying soil. The multi-layer cap in Alternatives 3A, 4A, and 5A would be designed to achieve the cap requirements of RCRA and the Ohio Hazardous Waste regulations.

The dioxin vault used in all alternatives would be designed to achieve RCRA tank and storage criteria. All alternatives would meet ARARS related to flood plains and wetlands, and fugitive emissions from grading and excavation would be controlled so that Ohio Air Quality Standards are not exceeded.

Alternative 3A, 4A, and 5A would meet groundwater quality ARARs by isolating the contaminants from the uncontaminated groundwater and eventually eliminating the contaminated groundwater by dewatering the site.

Alternative[redacted], and 5B would meet ARARs pertaining to groundwater quality by [redacted]ing and treating the contaminated groundwater. These alternative[redacted] incorporate a groundwater treatment system which would be designed to [redacted] effluent that meets the discharge standards of the NPDES permit and the Ohio Water Quality Standards. Air stripper emissions would be limited to levels that would meet Ohio Air Quality Standards.

Alternative 6 would achieve ARARS pertaining to groundwater quality by removing the sources of groundwater contamination and allowing existing contaminated groundwater to attenuate naturally.

Ohio Water Quality Standards would be met at the completion of the remediation under all alternatives evaluated.

Because Alternatives 3A, 3B, 4A, 4B, 5A, 5B, and 6 would provide on-site thermal treatment, the thermal treatment unit would have to comply with the technical requirements for a RCRA hazardous waste incinerator (RCRA Subpart O: 40 CFR §§264.343 to 264.351) and with Ohio Hazardous Waste regulations pertaining to design and operation of the system. Destruction and Removal Efficiencies (DREs) outlined in 40 CFR §264.343 would have to be met for solvents (99.99%), mixed organics (99.99%) and dioxin (99.9999%). In addition, emissions would have to comply with standards for hazardous air pollutants and the Ohio Ambient Air Quality Standards.

Some of the residue from the thermal treatment operations might have to be disposed of off-site at a RCRA landfill. Any contaminated wastewaters generated from the operation that could not be treated would have to be taken to a RCRA facility. This residue and any wastewaters to be disposed of in a RCRA landfill must meet treatment standards for any RCRA-listed waste (including, but not limited to, K035, F001, and F005) they contain as defined under the Land Disposal Restrictions (40 CFR Part 268). Residue which fails to pass the RCRA characteristic waste tests must undergo further treatment to eliminate the hazardous characteristic prior to land disposal. Transport and disposal of these wastes would have to comply with RCRA regulations for hazardous waste generators and U.S. Department of Transportation regulations for transporting hazardous waste and with the U.S. EPA's off-site disposal policy.

Alternative 6 would meet local zoning requirements for redevelopment and achieve RCRA criteria for a clean closure once the dioxin-contaminated material is removed from the on-site vault and the vault is dismantled.

Because it incorporates no groundwater treatment or control, Alternative 2 would not achieve ARARs for groundwater quality; i.e., SDWA MCLs, State MCLs, or health-based criteria that are classified as to-be-considered (TBCs). As this alternative would not comply with ARARs, and does not provide grounds for an ARAR waiver, Alternative 2 will be dropped from further consideration or discussion.

ARARs for each alternative are summarized in Table 9-1.

9.3 Long-Term Effectiveness and Permanence

With the exc[redacted] of Alternative 6, all alternatives would retain some residual risk [redacted]lying on the multi-layer cap or soil cover to prevent direct contact with contaminated soil contained on-site. While both technologies would be reliable if maintained and if used in conjunction with institutional controls and access restrictions, the potential for infiltration would be less for multi-layer cap alternatives since the geomembrane and geotextile barrier layer, if properly installed, is nearly impermeable. A drainage layer present in the multi-layer cap allows free

drainage of water that infiltrates the top layer, allowing seeping water to be removed, reducing the possibility that the water would penetrate the barrier layer.

Alternatives that include groundwater collection and treatment would require long-term operation and maintenance of a collection/treatment system and enforcement of aquifer use restrictions to provide long-term protection from consumption of contaminated groundwater. Although it appears unlikely that the shallow aquifer groundwater would be used, the alternatives that include groundwater control would avoid the need for long-term aquifer use restrictions altogether. The reliability of the "B" alternatives in preventing off-site migration of contaminated groundwater would depend upon maintenance of the groundwater collection and treatment system.

Alternatives 3A, 3B, 4A, 4B, 5A, and 5B lie between Alternatives 2 and 6 in terms of long-term effectiveness and reliability, since they would achieve removal and treatment of some contaminated soil. Because these alternatives would provide adequate protection over the long term, the most significant differences between Alternatives 3A, 3B, 4A, 4B, 5A, and 5B relate to their long-term reliability. Alternatives 3A and 3B would provide only slightly greater reliability since only a very small portion of the total mass of contaminants would be treated. Alternatives 4A and 4B would be nearly as reliable as Alternatives 5A and 5B, since the contaminated soil near the ground surface would be removed and treated. Alternative 6 would provide the highest degree of long-term effectiveness since no contaminated media would be left at the site following completion of the work (including the removal of the dioxin-contaminated material in the vault). Alternative 6 is the only alternative that does not rely on long-term maintenance or monitoring.

9.4 Reduction of Toxicity, Mobility, or Volume

Alternative 6 would achieve the greatest level of toxicity reduction by treating all contaminated soil. It should be noted, however, that the mass of contaminants removed is not directly proportional to the volume of soil treated. For example, the incremental mass of contaminants removed in Alternative 6 is only 20 percent more than the contaminant mass removed in Alternatives 5A or 5B, although Alternative 6 treats over 54 percent more soil (by volume) than Alternatives 5A or 5B.

Under Alternatives 3B, 4B, and 5B, groundwater treatment would not achieve a major reduction in the toxicity of contaminants on-site. Less than 10 percent of the mass of contaminants on-site are estimated to be present in the saturated soil and groundwater. Much more significant reductions in the toxicity of contaminants on-site would be achieved with soil thermal treatment. It is estimated that Alternatives 4A and 4B would achieve a 5 percent reduction in the volume of contaminated soil, and that Alternatives 5A and 5B would achieve a 60 percent reduction.

Alternative 3A would use the least amount of treatment by thermally treating 300 c.y. of contaminated soil and an undetermined amount of debris.

9.5 Short-Term Effectiveness

Alternatives 3A and 3B would provide the most immediate benefits and least short-term risk to the community. All alternatives would result in a small, temporary increase in risk to the community from generation of contaminated dust. This potential risk would be slightly greater for alternatives that involve excavation and thermal treatment because of more extensive soil handling and the potential release of VOCs during excavation. These risks would be mitigated using common construction techniques to minimize dust. Ambient air monitoring during construction would indicate whether there was any need for additional mitigative measures.

Alternatives that provide groundwater control would achieve their goal much faster (approximately 2 years following implementation) than groundwater collection and treatment (more than 50 years). Restrictions on groundwater use would prevent direct exposure during de-watering of the site aquifer.

To assess potential aquatic impacts during dewatering of the site aquifer, estimated concentrations in the surface water were compared to federal AWQCs and to both proposed and existing Ohio Water Quality Standards. Comparisons were made both inside and outside the mixing zone. The predicted surface water concentrations outside the mixing zone were made by diluting the highest groundwater contaminant concentrations with the creek flow estimates. As groundwater discharges to the creek, there would be approximately a 60:1 dilution ratio of creek water to groundwater. Most of the chemicals in the groundwater are VOCs and would be expected to volatilize once they are discharged to the creek. Therefore, the predicted surface water concentrations are seen to be conservative estimates. None of the estimated surface water concentrations outside the mixing zone exceeded any of the federal AWQCs.

Inside the mixing zone, the surface water contaminant concentrations were assumed to be the maximum groundwater contaminant concentrations to preclude any assumptions about dilution effects (actual contaminant levels should be lower due to dilution). Separate federal mixing zone criteria were not available, so the mixing zone concentrations were compared directly to federal AWQCs. Mixing zone concentrations exceeded the federal AWQCs for DDT and hexavalent chromium. No other chemicals exceeded the federal AWQCs.

The Ohio Water Quality Standards contain acute criteria within the mixing zone. No mixing zone concentrations exceeded any of these acute standards.

It is important to note the very conservative assumptions used in this determination. These assumptions are as follows:

- DDT was only detected in one monitoring well on-site, but it was assumed the contaminant existed at this concentration in a much larger area (the entire flow tube) for the purposes of the risk assessment.

- Analysis of groundwater was performed for total chromium

(hexavalent and trivalent) concentration, but the risk assessment assumed the chromium concentration was entirely due to hexavalent chromium.

- The maximum chemical concentration detected in each flow tube is considered to represent the chemical concentration of the entire flow tube.

The result of the conservative approach to the water quality investigation was the finding that even in the worst possible case, AWQCs would only be exceeded for two contaminants, the period of exceedence would be brief, and the water quality standards will not be exceeded at the completion of the remedy (when the aquifer is de-watered).

Alternatives that include thermal treatment pose a possible increased risk to the community from thermal treatment emissions. Proper operation of thermal treatment unit will not pose a significant increase in risk to the community. Alternatives 3A and 3B would expose the public to this possible risk for the shortest amount of time.

Alternatives that include thermal treatment of soil would not achieve remedial action goals as quickly as containment-only alternatives. The increased time required for thermal treatment would be 4 months for Alternatives 3A and 3B, 8 months for Alternative 4A and 4B, 20 months for Alternative 5A and 5B, and 30 months for Alternative 6.

9.6 Implementability

Of the alternatives involving thermal treatment, Alternative 3A would be the easiest alternative to implement, requiring a cap and construction of the diversion trench but not requiring permits for discharge of treated groundwater to the creek. Implementation of Alternative 3A would be complicated by the need for mobilizing, startup, and testing of an on-site incinerator, but this requirement holds true for all alternatives other than Alternatives 1 or 2.

Additional obstacles to implementing Alternative 3B include the permitting, construction, and operation of the groundwater collection and treatment system. An NPDES permit would be required for discharge of treated effluent to Cemetery Creek. Alternatives 4A and 4B, 5A and 5B, and 6 would be progressively more difficult to implement, requiring treatment of incrementally greater quantities of soil. Other than the time required to complete the remedial action, there are few differences between the implementability aspects of Alternatives 4A and 4B, 5A and 5B, and 6.

9.7 Cost

The most significant factor affecting capital cost is the quantity of soil treated. Some economy of scale would be achieved for thermal treatment of greater volumes of soil since mobilization and demobilization costs would be essentially the same between alternatives. Use of an incinerator already

mobilized on-site (like the one required for the Source Removal Operable Unit) would significantly reduce cost of these two alternatives. An estimated $3 million to $4 million of the capital cost associated with the mobilization, startup, testing, and demobilization of the on-site incinerator could be deducted from the estimated capital cost if the treatment unit for the Source Removal Operable Unit remedial action were already on-site, tested, and available.

Because the cost of capping is greater than the cost of a soil cover, the "A" alternatives have a higher capital cost than the "B" counterparts. "B" alternatives have a higher O&M cost because of operation of the groundwater treatment facility.

9.8 State Acceptance

The State of Ohio does not concur with the U.S. EPA's selection of Alternative 3A as the preferred remedial alternative for the Laskin Poplar Oil site. The State has expressed a preference for Alternative 6.

9.9 Community Acceptance

The U.S. EPA's preferred remedial alternative for the Laskin Poplar Oil site was presented at the start of the public comment period through distribution of a fact sheet, publication of display advertisements in the Ashtabula County Sentinel, on April 17 and 24; the Jefferson Gazette, on April 20; the Valley News, on April 12 and 19; and the Pyma News, on April 12 and 19. The advertisement informed the public of the placement of the proposed plan and public comment FS in the site information repositories. A formal public meeting to discuss the proposed plan was held in Jefferson, Ohio on April 26, 1989. Comments received indicate that most residents are supportive of the U.S. EPA's preferred alternative.

Several residents expressed concern about the U.S. EPA's proposed incineration of wastes and contaminated soils. Citizens are concerned that the U.S. EPA provide close inspection and oversight during the actual incineration process at the site. Citizens are mainly concerned about emissions from the incinerator stack entering the air, and noise during incinerator operations. Residents requested that a strict monitoring program be enforced and that the U.S. EPA make sure that the results are provided to the public. It is recommended that the U.S. EPA facilitate a means of informal contact with the local community by setting up a network with community representatives. Further, the U.S. EPA will require that corrective action program options be developed as part of the monitoring program. The [redacted] allow prompt response if emissions exceed levels at any compliance point in the monitoring system.

Finally, several residents expressed concern that the U.S. EPA's preferred alternative represents a conceptual design, specific elements of which will be determined later with limited input from local residents. To address this

concern, the U.S. EPA will consider extending the Laskin Poplar Oil Information Committee through the remedial design/remedial action phase of this project.

Public comments on the proposed plan and the FS are addressed in the Responsiveness Summary, attached to this document.

10.0 THE SELECTED REMEDY

Based on the findings of the Remedial Investigation and the Feasibility Study, and the evaluation of the nine criteria for the Laskin Poplar Oil site, the U.S. EPA has selected Alternative 3A. In the judgement of the U.S. EPA, Alternative 3A represents the best balance among the evaluation criteria and satisfies the statutory requirements of protectiveness, compliance with ARARs, cost-effectiveness, the utilization of permanent solutions and treatment to the maximum extent practicable.

The major components of the selected remedy consist of the following:

- Drain retention and freshwater ponds. Discharge surface water from ponds to Cemetery Creek, with treatment if required. Backfill freshwater pond with clean fill and grade retention pond area.
- Thermally treat contaminated soil, ash, and debris from the boiler house area and dispose of ash on-site (if delistable) or off-site in a RCRA landfill.
- Demolish and thermally treat or decontaminate dioxin-contaminated structures. If material can not be decontaminated or thermally treated, contain material in an on-site concrete vault and place beneath the cap for temporary storage until proper effective disposal can be secured for the material.
- Construct a groundwater diversion trench up-gradient of the contaminated soil and groundwater.
- Construct a multi-layer cap over soils in exceedance of 10^{-6} excess lifetime cancer risk level or Total Hazard Index of 1.
- De-water site by natural groundwater flow to Cemetery Creek.
- Conduct groundwater and surface water monitoring to assess quality of groundwater migrating towards Cemetery Creek.
- Impose access and use restrictions.

Alternative 3A provides treatment of contaminated material from the boiler house area. While this treatment may not be considered a primary component of Alternative 3A, the principal threat of the Laskin Poplar Oil site is being addressed with the thermal treatment of waste oils, sludge, and saturated soils in the Source Removal Operable Unit.

Alternative 3A addresses all remaining public health and environmental

threats posed by contaminated media at the site not addressed by the Source Removal Operable Unit.

10.1 Drain Freshwater and Retention Ponds

The freshwater and retention ponds on-site would be drained to Cemetery Creek to reduce infiltration to groundwater, and the freshwater pond would be filled with clean fill. The retention pond would be regraded. Sampling of surface water would be conducted prior to discharging surface water into Cemetery Creek. If levels detected exceed the Ohio Water Quality Standards, or the federal AWQCs, treatment will be required prior to discharging water. Further analysis for waters of both ponds will be required at the time of discharge to verify that the discharge will cause no violation of NPDES requirements.

10.2 Structures

The boiler house will be demolished and decontaminated or thermally treated. If the dioxin-contaminated structures cannot be decontaminated or thermally treated, they will be disposed of in a concrete vault on-site. Any untreated contaminated soils, ash, and debris from within in the boiler house will also be disposed of in the concrete vault on-site. The concrete vault will be placed on-site beneath the soil cover. The storage of dioxin material is a temporary measure until a technology is developed and proven to address dioxin material. This dioxin-contaminated material will be removed and disposed of when appropriate treatment is available, and the storage vault will be monitored and maintained in the interim.

The greenhouse structures would be dismantled and decontaminated. Contaminated soils from within the greenhouse area would be consolidated with contaminated soils near the pits and tanks, to be placed under the cap. The greenhouse area would then be regraded and vegetated to allow for proper drainage.

10.3 Multi-Layer Cap

Contaminated soils from the greenhouse (approximately 500 c.y.) would be consolidated with approximately 57,000 c.y. of contaminated soils that exceed a $1x10^{-6}$ excess cancer risk and total hazard index greater than 1.0. The contaminated soils would be contained beneath a soil/geomembrane multi-layer cap approximately 3.5 acres in size. The cap cover would prevent direct cont[redacted] contaminated soils and the geomembrane/geotextile liner would signi[redacted] reduce the infiltration of surface water through the cover. The [redacted]ld meet the State of Ohio requirements for landfill closure and [redacted]utlined under 40 CFR §264.310.

While the cap specifications will be finalized in the design process, it is anticipated that the cap will consist of a geomembrane/geotextile liner overlain by a drainage layer, a geotextile filter, a layer of fill soil, and a layer of topsoil. Infiltration collected by the drainage layer will be discharged to Cemetery Creek. To provide a stable slope for the cap, about

26,000 c.y. of contaminated soil would be moved to achieve the desired grading. An estimated 50,000 c.y. of clean soil would be imported to construct the cap. The cap would not extend into the floodplain area around Cemetery Creek.

10.4 Groundwater Control

Groundwater flowing toward the site would be diverted to Cemetery Creek. A diversion trench would be constructed up-gradient of the capped area, in order to intercept all groundwater flow in the shallow aquifer moving northward toward the site. A drain in the trench would conduct the intercepted flow directly to Cemetery Creek. Treatment would not be required because the upgradient groundwater is not contaminated. Although the trench and cap would de-water the site, groundwater and surface water monitoring would still be provided because hazardous substances would be contained on-site. SDWA MCLs would not apply due to the dewatering of the aquifer beneath the site.

Under Alternative 3A, a long-term monitoring program would be implemented to monitor contaminant concentrations and migration. This program would include the installation of additional monitoring wells north of the Laskin Poplar Oil site. The monitoring program would be designed to assess the quality of groundwater reaching Cemetery Creek. Additionally, the program would sample water from the upper and lower aquifers that may flow under Cemetery Creek and join regional ground-water flow. At a minimum, the program would meet the substantive requirements for ground-water monitoring under the Resource Conservation and Recovery Act (RCRA) as described in 40 CFR Part 264, Subpart F.

Water in Cemetery Creek will be monitored to ensure no short term acute health risk to exposed individuals or aquatic organisms during the dewatering of the shallow aquifer beneath the site.

Alternative 3A relies mainly on containment, institutional controls, and monitoring. Containment of soil prevents exposure to contaminated soils. Restricting ground-water use on-site would be effective in eliminating risks from drinking this ground water. Fencing would restrict access to the site. Potential future risks, as described in Section 10.8, would be reduced.

The trench would consist of a biodegradable slurry lined with a geotextile filter. The [redacted] would be approximately 1,170 feet long, and would be excavated to [redacted] ranging between 26 and 40 feet. The trench would be back filled [redacted] to a depth of about 5 feet below the existing ground surface. C[redacted] would be placed above the gravel.

10.5 Incineration of Contaminated Material

Alternative 3A proposes to incinerate approximately 300 c.y. of contaminated material from the boiler house area. This contaminated material would be in addition to the existing volume of contaminated material to be incinerated in the SROU. The residue ash would be tested for hazardous constituents, and

hazardous characteristics (RCRA characteristic waste tests). Analytical results would be compared to the U.S. EPA's delisting criteria. If levels do not exceed the delisting criteria, the residue ash would be disposed of on-site beneath the cap. If the ash does not meet the delisting criteria, the ash would be disposed of off-site in a RCRA hazardous waste facility. The ash residue must meet the RCRA treatment standards for incineration of soil containing hazardous waste outlined in 40 CFR §264.343. These standards include a DRE of 99.99% for solvents and mixed organics, and a DRE of 99.9999% for dioxin. 40 CFR §761.70 specifies a required DRE of 99.9999% for incineration of PCBs in concentrations greater than 50 parts per million (ppm).

10.6 Concrete Vault

Dioxin-contaminated debris that can not be decontaminated or treated would be dismantled and placed in a concrete vault meeting RCRA tank and storage requirements. The concrete vault would have to contain approximately 600 c.y. of material (based on a conservative estimate) and would be placed beneath the cap. Containment of these materials would be temporary until treatment or disposal technologies become available for dioxin-contaminated materials.

10.7 Groundwater and Land Use Restrictions

Restrictions on groundwater use for drinking water purposes would be placed on the Laskin Poplar Oil site. Currently there are no residential wells located on the strip of land between the site and Cemetery Creek. Although groundwater beneath the area between the site and Cemetery Creek is not contaminated, groundwater should not be used for drinking water. After the site is de-watered, there will be essentially no groundwater available for any purpose.

Restrictions would be placed on future use of the site to maintain the integrity and performance of the remedial alternative. The restrictions would be imposed to prohibit site use, land development, and ground-water extraction. For example, a restrictive covenant or similar provision would be imposed on the property, placing future owners on notice of site conditions and barring them from construction or excavation that would damage the remedy. Access restrictions would also be enforced to prevent any interference or vandalism at the site.

10.8 Reduction of Site Risks

Stringent health and safety measures will be taken due to the heavy equipment and intense clean-up operations during construction of the remedial alternative. Measures will be taken to ensure the health and safety of workers on-site as well as the local residents near the site. The U.S. EPA recommends that on-site residents temporarily relocate during construction of the remedy for safety reasons.

10.9 Cost

The total estimated present worth of alternative 3A is $11,000,000 which includes an annual operation and maintenance present worth of approximately $1,000,000. These costs are based on a present worth value of 30 years and discount rate of 5%. Based on the assumption that an incinerator would be operating on-site prior to the implementation of this alternative, the estimated actual present worth of alternative 3A is less than $ 11,000,000. The costs associated with site preparation, mobilization, and demobilization for the incinerator range between $3,000,000 and $4,000,000. The burning of the contaminated material from the boiler house area would be about $400,000. If the incinerator is already operating and could be used in the final remedial action, the total estimated present worth for alternative 3A could be $7,000,000 to $8,000,000. The estimated time to complete alternative 3A is 2 years. Figure 10-1 displays the diversion trench, multi-layer cap, and dioxin vault components of Alternative 3A.

11.0 STATUTORY DETERMINATIONS

11.1 The Selected Remedy is Protective of Human Health and the Environment

The remedial alternative selected for the Laskin Poplar Oil site will eliminate current and potential future risks to human health and the environment by the following means:

- Incinerating contaminated ash, soil, and debris from the boiler house area.
- Preventing exposure to contaminated soils by capping contaminated soils with an impermeable multi-layer cap, and with restrictions on future use.
- Preventing exposure to contaminated ground water by restricting groundwater use and dewatering the site aquifer.
- Limiting future ground-water contamination by significantly reducing infiltration through contaminated soils. The effectiveness of the cap will be evaluated by a long-term ground-water monitoring program. The program will require regular and [redacted] sampling of monitoring wells north of the site.

11.2 The S[redacted] Remedy Attains ARARs

The selected remedy will meet or attain all applicable or relevant and appropriate federal and State requirements. These requirements are listed below.

Chemical Specific

- Since the aquifer will be de-watered at the completion of the remedial action, MCLs promulgated under the SDWA will not apply upon completion of the remedy. Administrative controls will be used to prevent use of groundwater in the interim.

- Ohio Water Quality Standards listed in OAC Chapter 3745. Discharges to Cemetery Creek from the on-site aquifer prior to completion of the dewatering process are not anticipated to cause these standards to be violated. The water in the creek will be monitored to verify no acute risk to human health and the environment. The standards will be met upon completion of the de-watering process.

- Health-based soil to-be-considered (TBC) criteria will be met by preventing direct contact with the soil by use of a multi-media cap.

Location Specific

- Fill material may be placed in the flood plain of Cemetery Creek during the construction phase of the remedy. Mitigating measures will be used to ensure no violation of 40 CFR §264.18 or Executive Order 11988.

- Fill material may be placed in a wetland during the construction phase of the remedy. Mitigating measures will be used to ensure no violation of Executive Order 11990.

- The remedy will meet the intent of the Great Lakes Water Quality Agreement in Section 118 of the Clean Water Act.

Action Specific

- The thermal treatment unit will meet the substantive air emission requirements in Section 101 of the Clean Air Act, 40 CFR Part 52, and the emission standards for hazardous air pollutants outlined in 40 CFR §61. The unit must further meet the substantive air emissions requirements of OAC 3745-15-06, 3745-15-07, 3745-16, 3745-17-02, 3745-17-05, 3745-17-07, 3745-17-08, 3745-17-09, 3745-18-[redacted]3745-18-04, 3745-18-06, 3745-21-02, 3745-21-03, 3745-21-05[redacted]3745-21-07.

- The [redacted]al treatment unit will meet the substantive requirements of RCRA Subpart O for incineration of hazardous waste outlined in 40 CFR §§264.340 through 264.351. These include the Destruction and Removal Efficiency (DRE) requirements for solvents and mixed organics (99.99%) and dioxin (99.9999%). Toxic Substances Control Act (TSCA) standards for incineration of PCBs with concentrations

greater than 50 ppm are outlined in 40 CFR §761.70 (DRE of 99.9999% required).

- Temporary storage of contaminated material stockpiled for treatment will meet the substantive requirements of 40 CFR §§264.171 through 264.178. The material stockpiled for storage and the vault used to store the dioxin-contaminated material underneath the cap will also meet the substantive requirements of 40 CFR §§264.191 through 264.198.

- Ohio requirements for the closure of solid waste landfills (OAC 3745-27-09 and OAC 3745-27-10). The multimedia cap will exceed the required thickness of 2 feet and will meet all other substantive requirements within these regulations.

- Relevant and appropriate portions of RCRA requirements for closure of hazardous waste landfills with wastes in place. The low-permeability cap will comply with the requirements for landfill closure outlined in 40 CFR §264.310. The ground-water monitoring program will meet the substantive requirements of 40 CFR §§264.90 through 264.101 (Subpart F). The program will include a corrective action component that will be triggered if ground-water protection standards are exceeded at any point of compliance in the monitoring system.

- The surface impoundments will be closed in accordance with the requirements of 40 CFR §§264.221, and 264.226 through 264.228.

- Disposal of restricted RCRA-listed waste (including, but not limited to, K035, F001, and F005) both on-site and off-site must meet the applicable or relevant and appropriate requirements of the Land Disposal Restrictions outlined in 40 CFR Part 268.

- Any incinerated material that is not delistable will be taken to a RCRA-permitted facility in compliance with the requirements of 40 CFR §§264.301 through 264.304, 264.310, and 264.314.

11.3 The Selected Remedy is Cost-Effective

Alternative 3A represents a cost-effective remedial alternative for the Laskin Popl[redacted] site. This alternative attains the same reductions in current risk[redacted] soil ingestion and ground-water ingestion as Alternatives 3B through [redacted]h are considerably more expensive and/or require higher O&M expenditure[redacted]ternative 3A also provides an adequate degree of long-term protection, c[redacted]pared to these more expensive alternatives. Although Alternatives 3B through 6 may offer slightly increased long-term reliability, the relative cost increases outweigh the expected benefits. Additional components of these alternatives, such as groundwater treatment and increased incineration activity, do not increase the effectiveness of these alternatives in proportion to the increased costs. These additional measures are not justified based on current site conditions and contamination levels.

11.4 The Selected Remedy Utilizes Permanent Solutions and Alternate Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

The remedial action selected for implementation at the Laskin Poplar Oil site satisfies the statutory requirements of CERCLA Section 121. The selected remedy is consistent with the NCP, protects human health and environment, attains ARARs, and is cost-effective. The U.S. EPA has determined that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner for the final operable unit at the Laskin Poplar Oil site. Of those alternatives that are protective of human health and the environment and comply with ARARs, the U.S. EPA has determined that this selected remedy provides the best balance of tradeoffs in terms of long-term effectiveness and permanence, reduction in toxicity, mobility, or volume achieved through treatment, short-term effectiveness, implementability, cost, also considering the statutory preference for treatment as a principal element and considering State and community acceptance.

The selected remedy is judged to provide the same degree of protectiveness as the alternatives that incinerate greater amounts of soil. The selected remedy offers this protectiveness at a substantially lower cost, which is more cost-effective.

The selected remedy treats contaminated soil from the boiler house area. The selected remedy is more effective in the short-term, causing less of an impact on the local community, and requiring only 2 years to implement, as compared to the 4 years required for the alternative that incorporates incineration of all soils above the 10^{-6} risk level. The selected remedy also achieves groundwater remediation in this 2 years, while groundwater treatment alternatives would require an estimated 50 years to complete.

While the selected remedy does not offer as high a degree of long-term reliability and permanence as the options which incinerate a greater amount of soil, it will significantly reduce the inherent hazards posed by the contaminated soils through containment under a multi-layer cap and dewatering of the shallow aquifer on-site. In the judgement of the U.S. EPA, the principal threat at the site (the waste oil, sludge, and saturated soils near the pits and tanks) is being addressed by the treatment portion of the Source Removal Operable Unit. Therefore, this final operable unit follows-up the treatment in[redacted]ed in the Source Removal Operable Unit with a remedial action that [redacted] contains the remaining contaminants.

The selected [redacted] does not satisfy the statutory preference for a permanent solution in that it leaves contaminated soils on-site. However, source control and containment components of the selected remedy should significantly reduce the mobility of contaminants contained in the soils.

Because the selected alternative is not a permanent solution and will leave

wastes in place at the Laskin Poplar Oil site, the effectiveness of this remedial action must be reviewed at least once every 5 years.

11.5 The Selected Remedy Reduces Toxicity, Mobility, or Volume of Waste Materials as a Principal Element

Alternative 3A will reduce the toxicity and volume of contaminants within Laskin Poplar Oil site. This reduction will be accomplished through thermal treatment of the contaminated material from the boiler house area. By treating this material, the selected remedy addresses one of the principal threats posed by the site through the use of treatment technologies. Therefore, the statutory preference for remedies that employ treatment as a principal element of the final remedy is satisfied through the combination of this second and final remedial action and the Source Removal Operable Unit.

FIGURES
and
TABLES

NOTE: All figures and tables are taken from the Laskin Poplar Oil Community Relations Plan (March, 1989), the Remedial Investigation (December, 1988), or the Feasibility Study (April, 1989).

FIGURE 1-1 Jefferson, Ohio

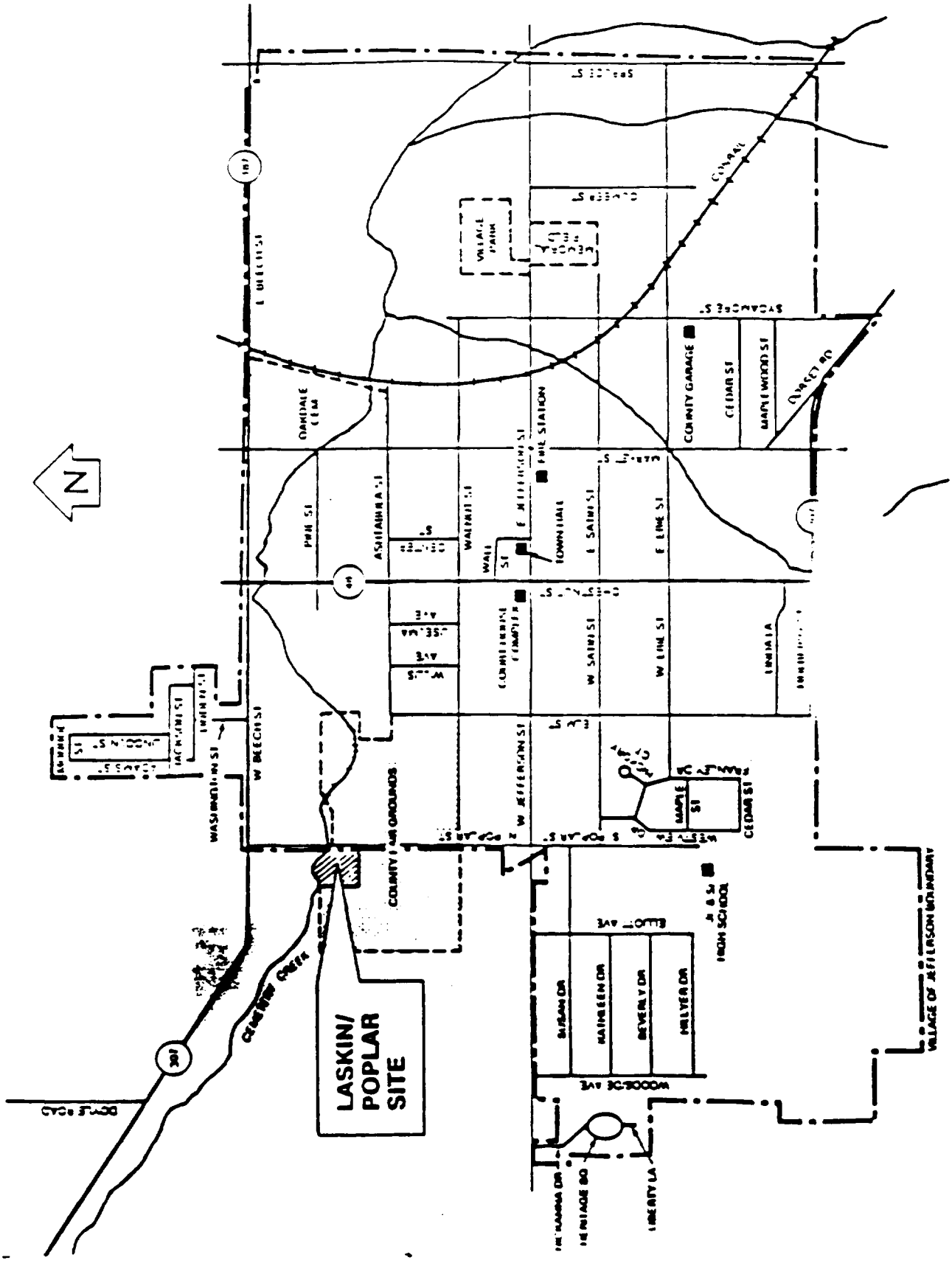


FIGURE 1-2 Laskin Poplar Oil Site Map

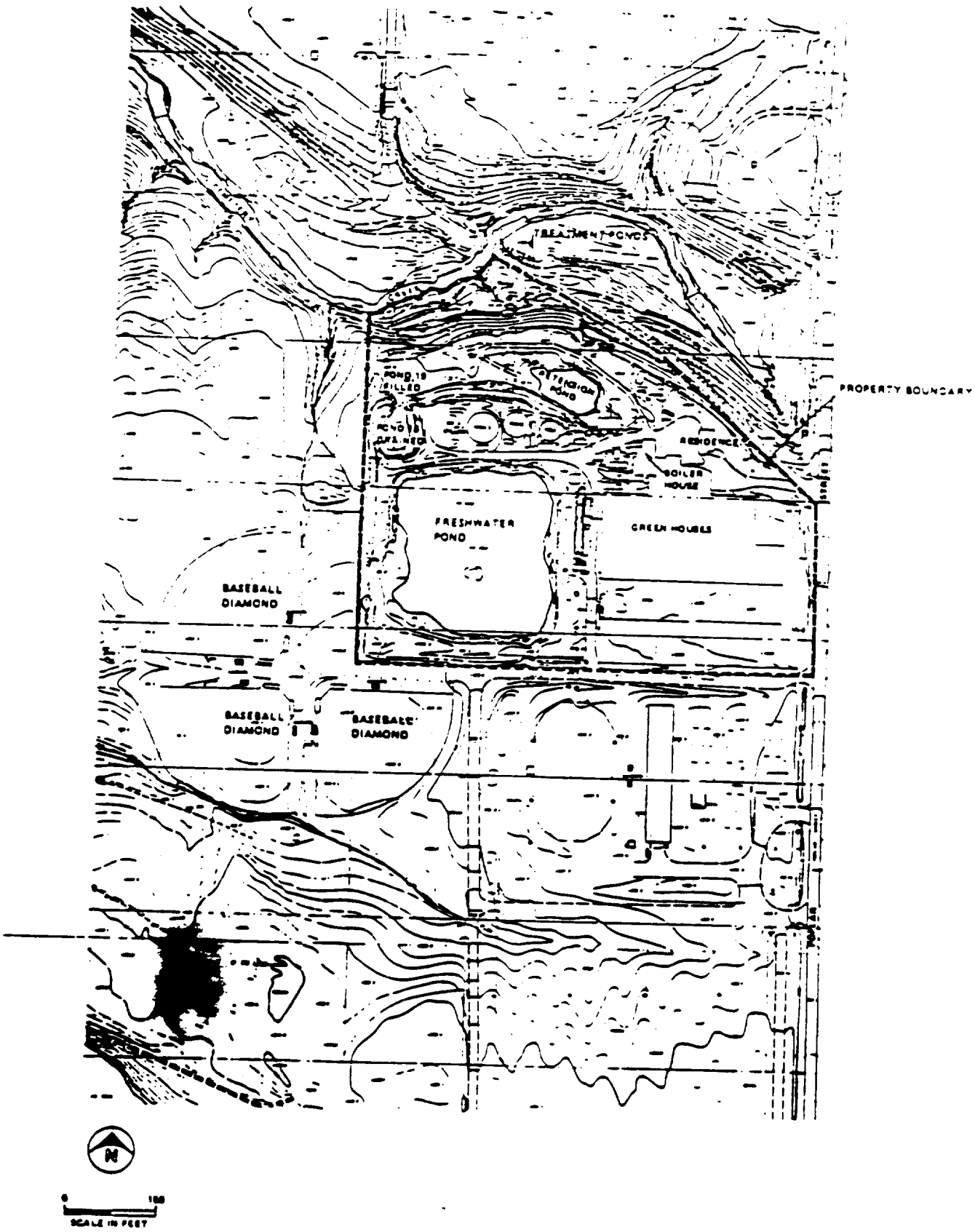


Figure 1-3 Sub Areas of the Laskin Poplar Oil Site

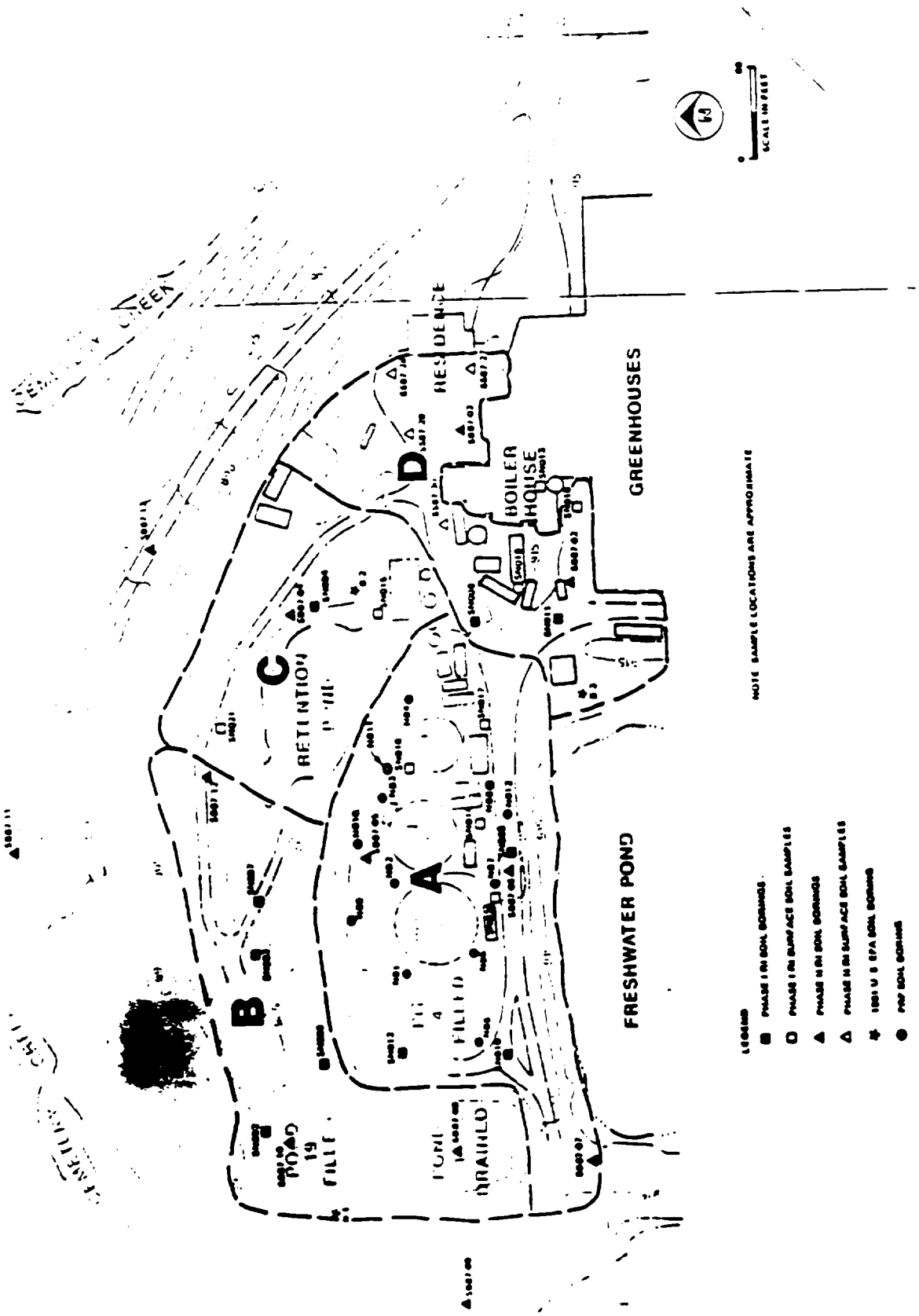


FIGURE 5-1 Summary of Shallow Aquifer Groundwater Contamination

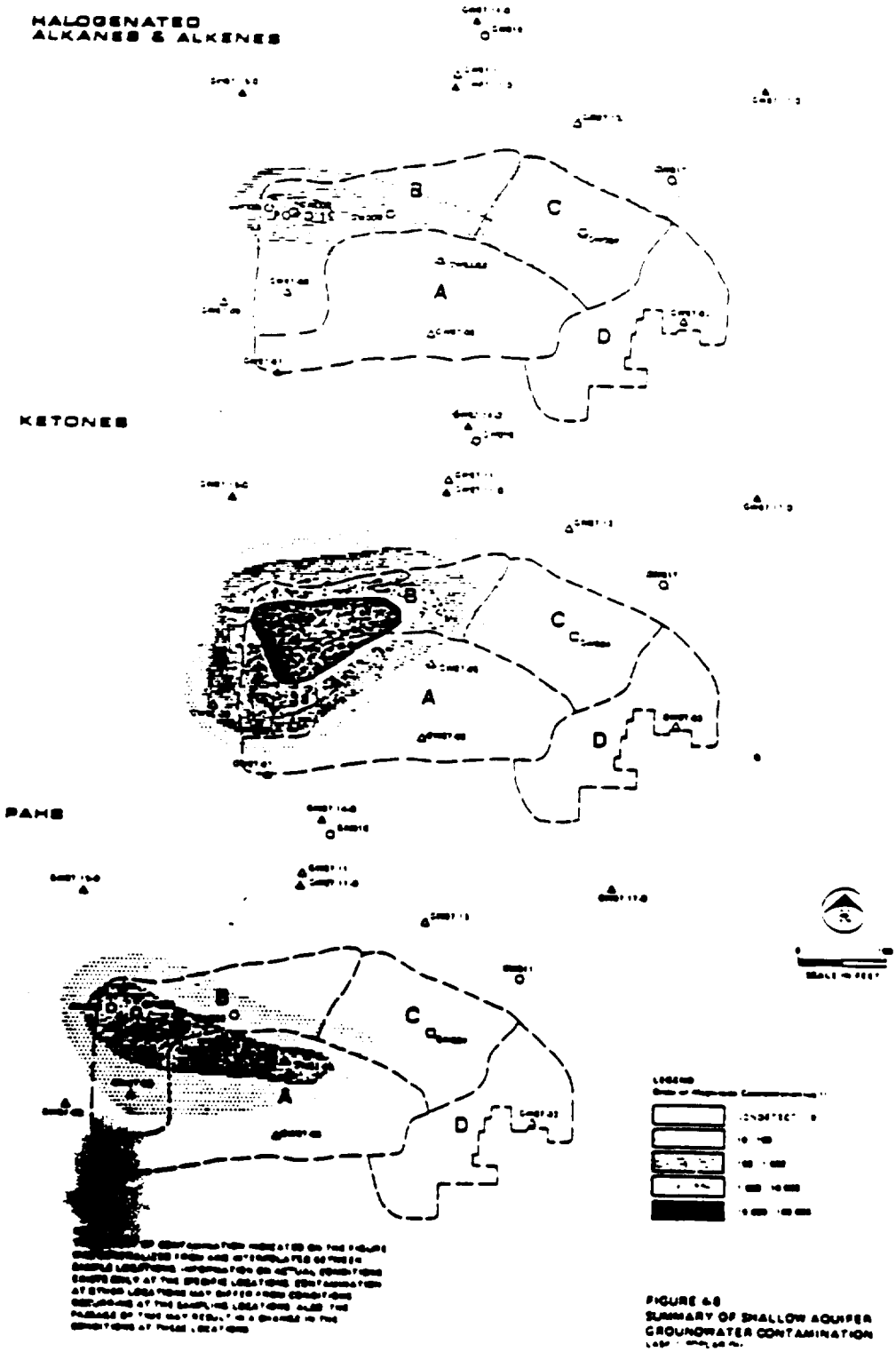
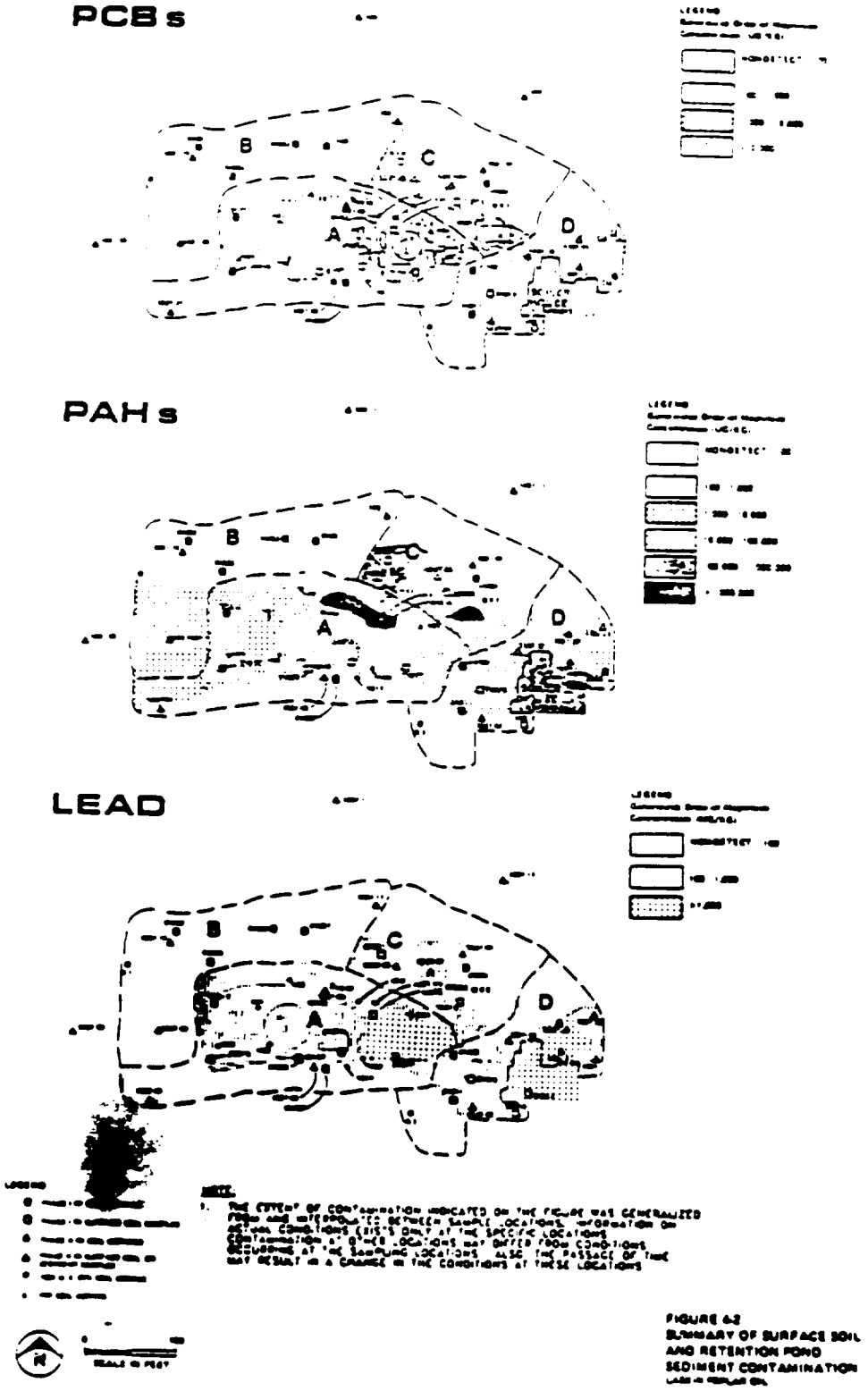
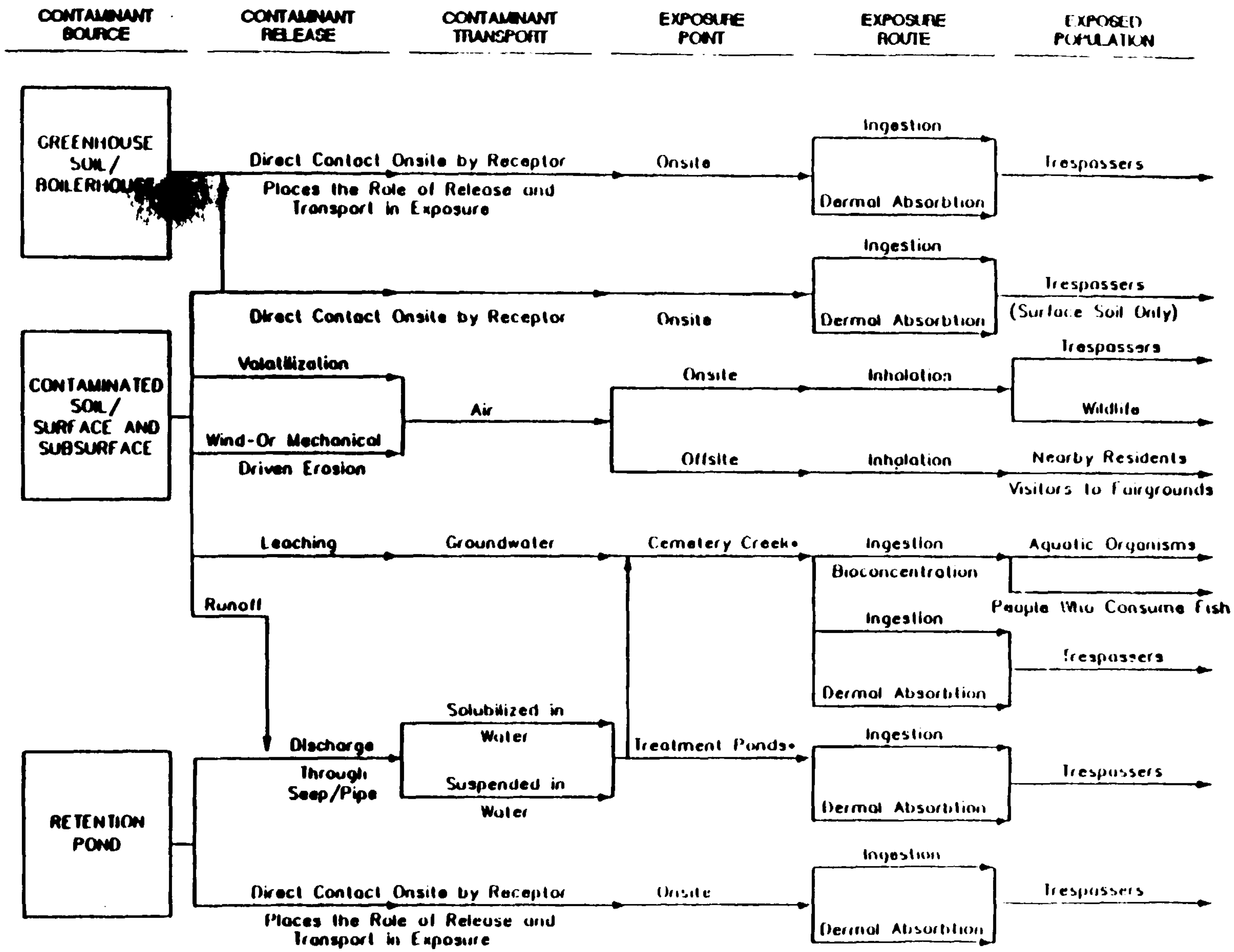


FIGURE 6.8
SUMMARY OF SHALLOW AQUIFER
GROUNDWATER CONTAMINATION

FIGURE 5-2 Summary of Surface Soil and Retention Pond Sediment Contamination





* INCLUDES BOTH SEDIMENT AND SURFACE WATER.

FIGURE 6-1 Exposure Pathways Analyzed Under Current Land Use Conditions

FIGURE 6-2 Exposure Pathways Analyzed Under Future Land Use Conditions

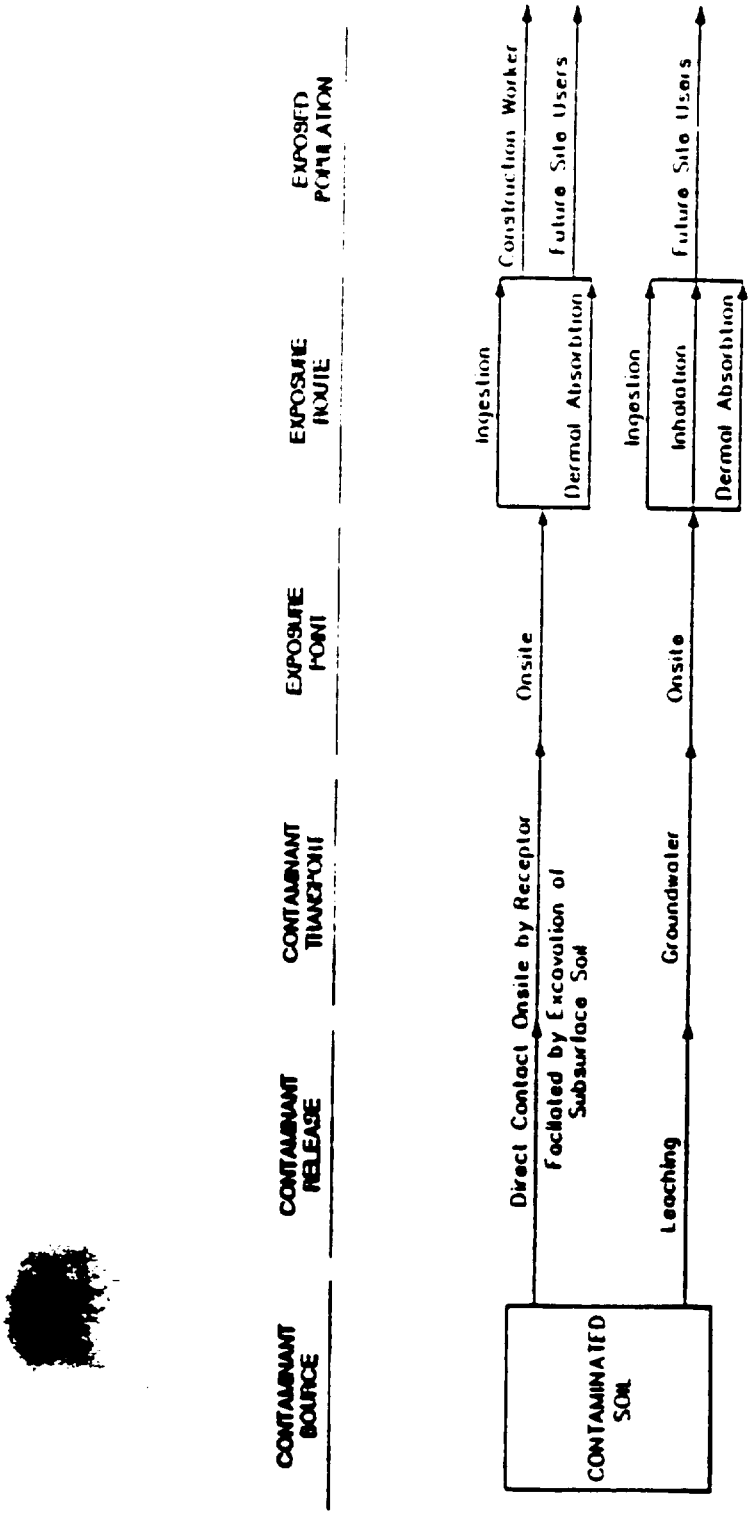


FIGURE 10-1 Approximate Location of Diversion Trench, Multi-layer Cap, and Dioxin Vault - Alternative 3A

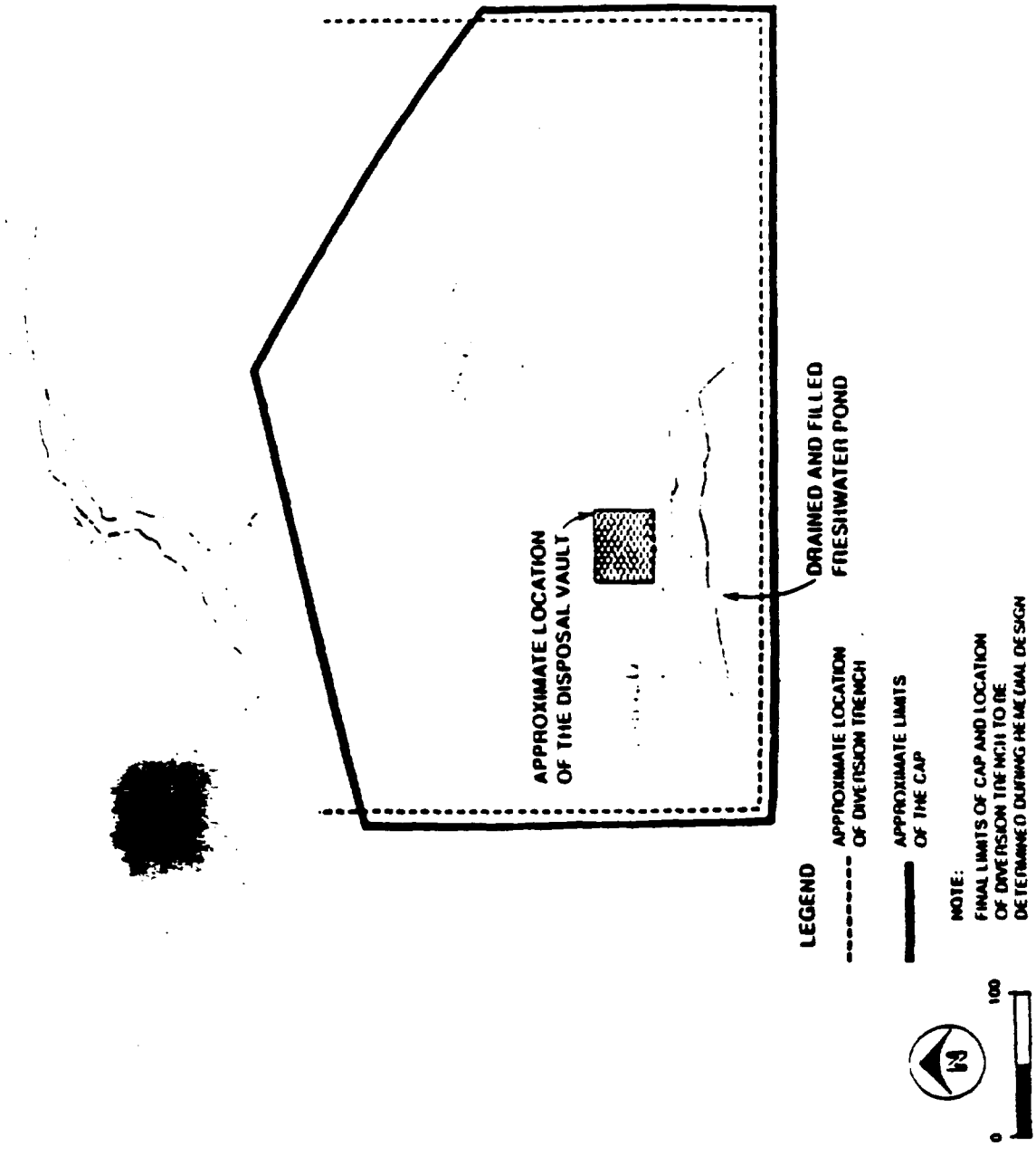


Table 5-1 Hazardous Substance List Compounds Detected at the Laskin Poplar Oil Site

HSL COMPOUNDS DETECTED AT THE LASKIN POPLAR OIL SITE

Chemical	Surface Soil	Subsurface Soil	Sediment	Groundwater Wells	Surface Water
POLY AND BICYCLIC AROMATIC HYDROCARBONS					
Benzo(a)anthracene	X	X	X		
Benzo(a)pyrene	X	X	X		
Benzo(b)fluoranthene	X	X	X		
Benzo(k)fluoranthene	X	X	X		
Chrysene	X	X	X		
Dibenzo(ah)anthrancene	X	X	X		
Indeno(1,2,3-cd)pyrene	X	X	X		
Acenaphthene	X	X	X		
Acenaphthylene	X	X			
Anthracene	X	X	X		
Benzo(ghi)perylene	X	X	X		
Fluoranthene	X	X	X		
Fluorene	X	X	X		
2-Methylnaphthalene	X	X	X		
Naphthalene	X	X	X		
Phenanthrene	X	X	X		
Pyrene	X	X	X		
PHENOLIC COMPOUNDS					
2-Chlorophenol					
4-Chlorophenyl Phenyl Ether					
2,4-Dichlorophenol		X			
2,4-Dimethylphenol	X	X			
2,4-Dinitrophenol		X			
4,6-Dinitro-2-methylphenol		X			
2-Methylphenol (o-Cresol)	X	X		X	
4-Methylphenol (p-Cresol)	X	X		X	
4-Nitrophenol		X			
N-Nitrosodiphenylamine	X	X			
Pentachlorophenol	X	X	X		
Phenol	X	X	X	X	
2,4,6-Trichlorophenol		X			
2,4,5-Trichlorophenol		X			
PHTHLATES					
Bis(2-ethylhexyl)phthalate	X	X	X	X	X
Butyl benzyl phthalate	X	X	X		
Diethyl phthalate		X		X	
Dimethylphthalate			X		
Di-n-butyl phthalate	X	X	X	X	X
Di-n-octyl phth[redacted]	X	X			
OTHER SEMI-VOLATILE [redacted]					
Benzoic Acid	X	X			
Bis(2-chloroethyl)ether				X	
Chlorobenzene		X			
Dibenzofuran	X	X	X		
1,2-Dichlorobenzene		X			
Isophorone	X	X		X	X
1,2,4-Trichlorobenzene	X	X			

Table 5-1 (Page 2 of 3)

HSL COMPOUNDS DETECTED AT THE LASKIN POPLAR OIL SITE

Chemical	Surface Soil	Subsurface Soil	Sediment	Groundwater Wells	Surface Water
POLYCHLORINATED BIPHENYLS					
Polychlorinated biphenyls	X	X	X		
PESTICIDES					
beta BHC(HCCH)		X			
Chlordane	X		X		
4,4'-DDD	X				
4,4'-DDE	X	X	X		
4,4'-DDT	X	X		X	
delta BHC(HCCH)	X		X		
Dieldrin	X		X		
Endosulfan I	X				
Endosulfan II	X				
Endosulfan Sulfate	X				
Endrin			X		
gamma BHC(Lindane)					
Heptachlor		X	X		
Heptachlor Epoxide		X	X		
BENZENE/TOLUENE/XYLENE					
Benzene		X	X	X	
Ethylbenzene	X	X	X	X	
Styrene	X	X			
Toluene	X	X		X	
Xylenes	X	X	X	X	X
HALOGENATED ALKENES AND ALKANES					
Carbon disulfide		X			X
Chloroform	X	X		X	
1,1-Dichloroethane	X	X		X	
1,2-Dichloroethane (EDC)	X	X		X	
1,2-Dichloroethene		X			
1,2-Dichloroethylene (trans)	X	X			
1,2-Dichloropropane		X			
Fluorotrichloromethane	X		X		
Methylene chloride	X	X			
Tetrachloroethene	X	X	X		
1,1,2-Trichloroethane	X				
1,1,1-Trichloroethane	X	X	X	X	
Trichloroethene	X	X		X	
Vinyl [redacted]ide		X		X	
[redacted]					
KETONES					
Ace[redacted]	X	X	X	X	
2-Bu[redacted]	X	X	X		
2-Hexa[redacted](methylmethylketone)					
4-Methyl-2-pentanone (MIBK)	X	X		X	X

Table 5-1 (Page 3 of 3)

MS. COMPOUNDS DETECTED AT THE LASKIN POPLAR OIL SITE

Chemical	Surface Soil	Subsurface Soil	Sediment	Groundwater Wells	Surface Water
INORGANIC CHEMICALS					
Aluminum	X	X	X		X
Antimony	X	X			
Arsenic	X	X	X	X	X
Barium	X	X	X	X	X
Beryllium	X	X	X	X	
Cadmium	X	X	X	X	X
Calcium	X	X	X		X
Chromium	X		X	X	
Cobalt	X	X	X		
Copper	X	X	X		X
Cyanide	X	X	X		X
Iron	X	X	X		X
Lead	X	X	X		X
Magnesium	X	X	X		X
Manganese	X	X	X	X	X
Mercury	X	X	X		X
Nickel	X	X		X	
Potasium	X	X	X		
Selenium		X			X
Silver	X				
Sodium	X	X	X		X
Thallium	X	X	X	X	X
Vanadium	X	X	X		X
Zinc	X	X	X	X	X

Table 5-2 Summary of Chemicals Detected at the Laskin Poplar Oil Site
Presented by Functional Grouping

DETECTED CHEMICALS	CHEMICAL GROUPINGS	VOLATILITY	MOBILITY	FISH BIOACCUMULATION	CARCINOGEN?
2-METHYLNAPHTHALENE	PAH	MODERATE	SLIGHT	HIGH	
3,4-BENZOFLUORANTHENE	PAH				
ACENAPHTHENE	PAH	LOW	SLIGHT	MODERATE	
ACENAPHTHYLENE	PAH	HIGH	SLIGHT	MODERATE	
ANTHRACENE	PAH	HIGH	SLIGHT	HIGH	
BENZO(A)ANTHRACENE	PAH	LOW	IMMOBILE	HIGH	YES
BENZO(A)PYRENE	PAH	LOW	IMMOBILE	HIGH	YES
BENZO(B)FLUORANTHENE	PAH	MODERATE	IMMOBILE	HIGH	YES
BENZO(GHI)PERYLENE	PAH	NON	IMMOBILE	HIGH	
BENZO(K)FLUORANTHENE	PAH	MODERATE	IMMOBILE	HIGH	YES
CHRYSENE	PAH	LOW	IMMOBILE	HIGH	YES
DIBENZO(A,H)ANTHRACENE	PAH	NON	IMMOBILE	HIGH	YES
FLUORANTHENE	PAH	LOW	IMMOBILE	HIGH	
FLUORENE	PAH	MODERATE	SLIGHT	HIGH	
INDENO(1,2,3-CD)PYRENE	PAH	NON	IMMOBILE	HIGH	YES
NAPHTHALENE	PAH	MODERATE	LOW	MODERATE	
PHENANTHRENE	PAH	MODERATE	SLIGHT	HIGH	
PYRENE	PAH	LOW	IMMOBILE	HIGH	
2,4,5-TRICHLOROPHENOL	PHENOLIC	MODERATE	HIGH	MODERATE	
2,4,6-TRICHLOROPHENOL	PHENOLIC	LOW	SLIGHT	MODERATE	YES
2,4-DICHLOROPHENOL	PHENOLIC	LOW	MODERATE	LOW	
2,4-DIMETHYLPHENOL	PHENOLIC	LOW	HIGH	MODERATE	
2,4-DINITROPHENOL	PHENOLIC	NON	VERY HIGH	NO DATA	
2-CHLOROPHENOL	PHENOLIC	MODERATE	HIGH	LOW	
2-METHYLPHENOL	PHENOLIC	LOW	VERY HIGH	NONE	
4,6-DINITRO-2-METHYLPHENOL	PHENOLIC	MODERATE	MODERATE	MODERATE	
4-CHLORO-3-METHYLPHENOL	PHENOLIC				
4-METHYLPHENOL	PHENOLIC	NON	VERY HIGH	NONE	
4-NITROPHENOL	PHENOLIC				
PENTACHLOROPHENOL	PHENOLIC	LOW	IMMOBILE	HIGH	
PHENOL	PHENOLIC	LOW	VERY HIGH	NONE	
BIS(2-ETHYLHEXYL)PHTHALATE	PHTHALATE	NON	IMMOBILE	MODERATE	YES
BUTYL BENZYL PHTHALATE	PHTHALATE	LOW	SLIGHT	HIGH	
DI-N-BUTYL PHTHALATE	PHTHALATE	NON	IMMOBILE	HIGH	
DI-N-OCTYL PHTHALATE	PHTHALATE	MODERATE	IMMOBILE	HIGH	
DIETHYLPHTHALATE	PHTHALATE				
DIMETHYLPHTHALATE	PHTHALATE	LOW	VERY HIGH	LOW	
1,2,4-TRICHLOROBENZENE	OTHER SEMIVOLATILE	HIGH	SLIGHT	HIGH	
1,2-DICHLOROBENZENE	OTHER SEMIVOLATILE	HIGH	LOW	MODERATE	
1,3-DICHLOROBENZENE	OTHER SEMIVOLATILE				
3-NITROANILINE	OTHER SEMIVOLATILE				
4-CHLOROPHENYL PHENYL ETHER	OTHER SEMIVOLATILE	MODERATE	SLIGHT	HIGH	
BENZOIC ACID	OTHER SEMIVOLATILE	NON	HIGH	LOW	
BENZYL ALCOHOL	OTHER SEMIVOLATILE				
CHLOROBENZENE	OTHER SEMIVOLATILE	HIGH	MODERATE	LOW	
DIBENZOFURAN	OTHER SEMIVOLATILE	LOW	SLIGHT	HIGH	
ISOPHORONE	OTHER SEMIVOLATILE	LOW	HIGH	LOW	
N-NITROSODIPHENYL[redacted]	OTHER SEMIVOLATILE	MODERATE	LOW	MODERATE	YES
AROCLOR-1221	PCB	HIGH	IMMOBILE	HIGH	YES
AROCLOR-1242	PCB	HIGH	IMMOBILE	HIGH	YES
AROCLOR-1248	PCB	HIGH	IMMOBILE	HIGH	YES
AROCLOR-1254	PCB	HIGH	IMMOBILE	HIGH	YES
AROCLOR-1260	PCB	HIGH	IMMOBILE	HIGH	YES
2,3,7,8-TCDD EQUIVALENTS	PCDD/PCDF				
4,4-DDD	PESTICIDE	LOW	IMMOBILE	HIGH	YES
4,4-DDE	PESTICIDE	MODERATE	IMMOBILE	HIGH	YES
4,4-DDT	PESTICIDE	MODERATE	IMMOBILE	HIGH	YES

Table S-4

DETECTED CHEMICALS	CHEMICAL GROUPINGS	VOLATILITY	MOBILITY	FISH BIOACCUMULATION	CARCINOGEN?
ALDRIN	PESTICIDE				
ALPHA CHLORDANE	PESTICIDE	HIGH	SLIGHT	HIGH	YES
BETA BHC	PESTICIDE	LOW	SLIGHT	MODERATE	YES
CHLORDANE	PESTICIDE	HIGH	SLIGHT	HIGH	YES
DELTA BHC	PESTICIDE	NON	SLIGHT	MODERATE	
DIELDRIN	PESTICIDE	LOW	LOW	HIGH	YES
ENDOSULFAN I	PESTICIDE	MODERATE	VERY HIGH	MODERATE	
ENDOSULFAN II	PESTICIDE	MODERATE	VERY HIGH	MODERATE	
ENDOSULFAN SULFATE	PESTICIDE	HIGH	SLIGHT	HIGH	
ENDRIN	PESTICIDE	LOW	SLIGHT	HIGH	
GAMMA BHC	PESTICIDE	LOW	LOW	MODERATE	YES
GAMMA CHLORDANE	PESTICIDE	HIGH	SLIGHT	HIGH	YES
HEPTACHLOR	PESTICIDE	HIGH	SLIGHT	HIGH	YES
HEPTACHLOR EPOXIDE	PESTICIDE	MODERATE	MODERATE	HIGH	YES
BENZENE	BTX	HIGH	HIGH	LOW	YES
ETHYLBENZENE	BTX	HIGH	LOW	LOW	
O-XYLENE	BTX	HIGH	MODERATE	MODERATE	
STYRENE	BTX	HIGH	LOW	LOW	
TOLUENE	BTX	HIGH	MODERATE	LOW	
XYLENE	BTX	HIGH	MODERATE	MODERATE	
1,1,1-TRICHLOROETHANE	HALOG. ALKENE/ALKANE	HIGH	MODERATE	LOW	
1,1,2-TRICHLOROETHANE	HALOG. ALKENE/ALKANE	HIGH	HIGH	LOW	YES
1,1-DICHLOROETHANE	HALOG. ALKENE/ALKANE	MODERATE	VERY HIGH	NONE	YES
1,2-DICHLOROETHANE	HALOG. ALKENE/ALKANE	MODERATE	VERY HIGH	NONE	YES
1,2-DICHLOROETHENE	HALOG. ALKENE/ALKANE	HIGH	HIGH	NONE	
1,2-DICHLOROPROPANE	HALOG. ALKENE/ALKANE	HIGH	HIGH	NONE	
CARBON DISULFIDE	HALOG. ALKENE/ALKANE	HIGH	HIGH	LOW	
CHLOROFORM	HALOG. ALKENE/ALKANE	HIGH	VERY HIGH	NONE	YES
FLUOROTRICHLOROMETHANE	HALOG. ALKENE/ALKANE				
METHYLENE CHLORIDE	HALOG. ALKENE/ALKANE	HIGH	VERY HIGH	NONE	YES
TETRACHLOROETHENE	HALOG. ALKENE/ALKANE	HIGH	MODERATE	LOW	
TRANS-1,2-DICHLOROETHYLENE	HALOG. ALKENE/ALKANE	HIGH	HIGH	NONE	
TRICHLOROETHENE	HALOG. ALKENE/ALKANE	HIGH	HIGH	LOW	YES
VINYL CHLORIDE	HALOG. ALKENE/ALKANE	HIGH	HIGH	NONE	YES
2-BUTANONE	KETONE	MODERATE	VERY HIGH	NO DATA	YES
2-HEXANONE	KETONE	LOW	VERY HIGH	LOW	
4-METHYL-2-PENTANONE	KETONE	MODERATE	VERY HIGH	NONE	
ACETONE	KETONE	MODERATE	VERY HIGH	NONE	
ANTIMONY	ANTIMONY		V HIGH	NONE	
ARSENIC	ARSENIC		HIGH	NONE	
BARIUM	BARIUM		LOW	NONE	
BERYLLIUM	BERYLLIUM		LOW	LOW	
CADMIUM	CADMIUM		MODERATE	MODERATE	
CHROMIUM	CHROMIUM				
COBALT	COBALT		V HIGH	NONE	
COPPER	COPPER		HIGH	NONE	
CYANIDE	CYANIDE		V HIGH	NONE	
LEAD	LEAD		MODERATE	LOW	
MANGANESE	MANGANESE		HIGH	NONE	
MERCURY	MERCURY		MODERATE	NONE	
NICKEL	NICKEL		HIGH	NONE	
SELENIUM	SELENIUM		HIGH	NONE	
SILVER	SILVER		V HIGH	NONE	
THALLIUM	THALLIUM		V HIGH	NONE	
TIN	TIN		HIGH	NONE	
VANADIUM	VANADIUM		V HIGH	NONE	
ZINC	ZINC		MODERATE	MODERATE	

Table 6-1 Potential Contaminants of Concern at the Laskin Poplar Oil Site

Acetone	Gamma HCCH (Lindane)
Antimony	Heptachlor
Arsenic	Heptachlor Epoxide
Barium	Indeno(1,2,3-cd)pyrene
Benzene	Isophorone
Benzo(a)anthracene	Lead
Benzo(a)pyrene	Manganese
Benzo(b)fluoranthene	Mercury
Benzo(k)fluoranthene	Methylphenol (Cresol)
Beryllium	Methylene chloride
beta HCCH	4-Methyl-2-pentanone (MIBK)
Bis(2-chloroethyl)ether	Nickel
Bis(2-ethylhexyl)phthalate	N-Nitrosodiphenylamine
2-Butanone (MEK)	PCB
Cadmium	Pentachlorophenol
Carbon disulfide	Phenol
Chlordane	Selenium
Chlorobenzene	Silver
Chloroform	Styrene
Chromium	2,3,7,8-TCDD (Dioxin)
Chrysene	Tetrachloroethene
Copper	Thallium
DDT	Toluene
Dibenzo(a,h)anthracene	1,2,4-Trichlorobenzene
Dibutyl phthalate	1,1,1-Trichloroethane
1,1-Dichloroethane	1,1,2-Trichloroethane
1,2-Dichloroethane (EDC)	Trichloroethene
2,4-Dichlorophenol	Trichlorofluoromethane
Dieldrin	2,4,5-Trichlorophenol
Diethyl phthalate	2,4,6-Trichlorophenol
2,4-Dinitrophenol	Vanadium
Endosulfan	Vinyl chloride
Ethylbenzene	Xylenes
Cyanide	Zinc

(a) Potential chemicals of concern indentified based on availability of cancer potency factor, reference dose, drinking water criteria or standard, or environmental criteria.

Table 6-2 Risk Characterization Summary - Laskin Poplar Oil Site

Risk Characterization Summary
Laskin Poplar Oil Site

Media and Exposure Route	Exposure Point	Potentially Exposed Population	Risk Characterization Summary	Chemicals of Concern	Comment
Soil Ingestion	Onsite	Trespassers	Excess lifetime cancer risk estimate: 7 x 10-6 to 3 x 10-7 6 x 10-7 to 3 x 10-8 Hazard Index Exceeded	 PAHs, PCBs Dioxin Lead	Assumes no restrictions to site access.
Soil, Ash, Residue Ingestion	Boiler [redacted]	Trespassers	Excess lifetime cancer risk estimate: 7 x 10-11 to 2 x 10-5 1 x 10-6 to 2 x 10-4 Hazard Index Exceeded	 PAHs, PCBs Dioxin Lead, Cadmium, Mercury,	Assumes no restrictions to site access. Maximum risk for exposure to dioxin and metals in ash.
Soil Ingestion	Greenhouse	Trespassers	Excess lifetime cancer risk estimate: 4 x 10-7 to 3 x 10-7 Hazard Index Exceeded	 PAHs, Dieldrin Lead, Endosulfan	Assumes no restrictions to site access.
Soil Ingestion	Onsite	Future Site Occupants	Excess lifetime cancer risk estimate: 2 x 10-3 to 7 x 10-5 6 x 10-7 to 3 x 10-8 Hazard Index Exceeded	 PAHs, PCBs Dioxin Lead, Cadmium, Chromium, Antimony	Requires site development for exposures to occur. Similar risks for surface and subsurface soils.
Sediment Ingestion	Onsite	Trespassers	Excess lifetime cancer risk estimate: 3 x 10-5 to 6 x 10-6 Hazard Index Exceeded	 PAHs, PCBs Lead	Assumes no restrictions to site access.
Surface Water Ingestion	Onsite	Trespassers	Excess lifetime cancer risk estimate: NO carcinogens detected Hazard Index NOT Exceeded	 None None	Assumes no restrictions to site access. Surface water is relatively uncontaminated; contamination in sediment.
Surface Water Ingestion	Cemetery Creek	Offsite Residents	Excess lifetime cancer risk estimate: 4 x 10-8 Hazard Index NOT Exceeded	 Vinyl Chloride None	Risk estimates are based on modeling of groundwater discharge to creek. Contaminants not detected in creek
Surface Water Contact	Cemetery Creek	Aquatic Organisms	NO State or Federal Criteria exceeded based on predicted creek concentrations		Risk estimates are based on modeling of groundwater discharge to creek. Contaminants not detected in creek.

Risk Characterization Summary
Taskin Poplar Oil Site

Media and Exposure Route	Exposure Point	Potentially Exposed Population	Risk Characterization Summary	Chemicals of Concern	Comment
Airborne Contaminant Inhalation	Onsite	Trespassers	Excess lifetime cancer risk estimate 4 x 10-8 to 6 x 10-9 Hazard Index Not Exceeded	Vinyl chloride, Arsenic	Risks based on worst case volatilization and resuspension assumptions
Airborne Contaminant Inhalation	Site Boundary	Residents	Excess lifetime cancer risk estimate 5 x 10-8 to 1 x 10-6 Hazard Index Not Exceeded	Vinyl chloride, Arsenic	Risks based on worst case volatilization and resuspension assumptions and exposure settings.
Airborne Contaminant Inhalation	Offsite	Residents, Visitors to Fairgrounds and Ballpark	Excess lifetime cancer risk estimate 4 x 10-11 to 1 x 10-8 Hazard Index Not Exceeded	Vinyl chloride	Risks based on worst case volatilization and resuspension assumptions
Groundwater Ingestion	Onsite	Future Residents	Drinking water standards and criteria exceeded	Arsenic, Beryllium, DDT, Nickel, 1,2-Dichloroethane Benzene, Xylenes, Trichloroethane	Requires site development for exposures to occur. Existing alternative water supply reduces potential of exposure. Evaluation based on concentrations detected in monitoring wells, not predicted concentrations.
			Excess lifetime cancer risk estimate 3 x 10-2 to 1 x 10-6	Vinyl chloride, Benzene, 1,2-Dichloroethane, DDT, Trichloroethane	
			Hazard Index Exceeded	Acetone, Manganese, Phenol, Methylphenol, 4-Methyl-2-pentanone,	
Sediment Ingestion	Cemetery Creek	Offsite Residents	--	--	No contaminants attributed to the site detected in the sediment. However, a potentially complete mechanism for contaminant release exists

Table 6-3 Summary of Groundwater Concentrations that Exceed Drinking Water Standards at the Laskin Poplar Oil Site

Well Location	Chemical	Concentration ug/l	Criteria (a) Exceeded	Criteria Level
GW002-87	Arsenic	48	WQC-RISK	0.0025
	DDT	0.11	WQC-RISK	0.00012
	Nickel	124	WQC-TOX	15.4
GW004-87	1,2-Dichloroethane	19	MCLG	0
			MCL	5
			WQC-RISK	0.94
GW008-87	1,2-Dichloroethane	200	MCLG	0
			MCL	5
			WQC-RISK	0.94
	Benzene	100	MCLG	0
			MCL	5
			WQC-RISK	0.67
	Xylenes	650	DWHA	1.8
			MCLG-PROP	440
	Vinyl chloride	350	MCLG	0
			MCL	2
			WQC-RISK	2
GW009-87	Arsenic	35	WQC-RISK	0.0025
GW011-87	1,2-Dichloroethane	4	MCLG	0
			WQC-RISK	0.94
GW87-03	Beryllium	2	WQC-RISK	0.0039
GW87-05	1,2-Dichloroethane	4	MCLG	0
			WQC-RISK	0.94
GW87-06	Arsenic	2	WQC-RISK	0.0025
GW87-07	[redacted]	2	WQC-RISK	0.0025
GW87-11	[redacted]	2	WQC-RISK	0.0025
		22	WQC-TOX	15.4

Table 6-3 (Page 2 of 2)
SUMMARY OF GROUNDWATER CONCENTRATIONS THAT EXCEED DRINKING WATER STANDARDS
AT THE LASKIN POPLAR OIL SITE

Well Location	Chemical	Concentration ug/l	Criteria (a) Exceeded	Criteria Level
GW27-13	Arsenic	17	WQC-RISK	0.0025
	1,2-Dichloroethane	3	MCLG	0
			WQC-RISK	0.94
	Trichloroethene	4	MCLG	0
			WQC-RISK	2.8
	Nickel	20	WQC-TOX	15.4

(a) Criteria:
MCL - Maximum Contaminant Level
MCLG - Maximum Contaminant Level Goal
WQC-RISK - Water Quality Criteria for human health (drinking water only) at 10-6 cancer risk level
WQC-TOX - Water Quality Criteria for human health--toxicity protection for noncarcinogens
DWHA - Drinking Water Health Advisories--Lifetime

Table 6-4 Summary of Hazardous Substances List Chemical Concentrations and Associated Human Risks in Groundwater at the Laskin Poplar Oil Site

Well Location	Chemical	Concentration ug/l	Excess Lifetime Cancer Risk (a)	Infant: Hazard Index (b)	Adult: Hazard Index (b)
GW002-87	Arsenic	48	2 x 10-3	-	-
	DDT	0.11	1 x 10-6	-	-
	Acetone	24000	-	24	7
	Manganese	8320	-	4	1
	4-Methyl-2-pentanone	2800	-	6	2
	Methyl phenol	1970	-	4	1
	Total (with Arsenic)	-	2 x 10-3	NA	NA
	Total (without Arsenic)	-	1 x 10-6	40	11
GW004-87	1,2-Dichloroethane	19	5 x 10-5	-	-
	Total		5 x 10-5	-	-
GW008-87	Vinyl chloride	350	2 x 10-2	-	-
	1,2-Dichloroethane	200	5 x 10-4	-	-
	Benzene	100	8 x 10-5	-	-
	Acetone	10000	-	10	3
	Methylphenol	2360	-	5	1
	Phenol	720	-	2	0.5
	Total	-	2 x 10-2	17	5
GW009-87	Arsenic	35	2 x 10-3	-	-
	Methylene chloride	3000	6 x 10-4	-	-
	Acetone	55000	-	55	15
	Methylphenol	2150	-	4	1
	Total (with Arsenic)	-	2 x 10-3	NA	NA
	Total (without Arsenic)	-	7 x 10-4	61	17
GW011-87	1,2-Dichloroethane	4	1 x 10-5	-	-
	Total	-	1 x 10-5	-	-
GW87-05	1,2-Dichloroethane	4	1 x 10-5	-	-
	Total	-	1 x 10-5	-	-
GW87-08	Acetone	6500	-	7	2
	To[redacted]	-	-	7	2
GW[redacted]3	C[redacted]	13	2 x 10-5	-	-
	1,[redacted]oroethane	3	8 x 10-6	-	-
	Tri[redacted]oroethane	4	1 x 10-6	-	-
	Total	-	3 x 10-5	<1	<0.2

(a) Monitoring wells with no carcinogens not listed.
(b) Chemical with hazard indexes less than one not listed. However, the total hazard index listed represents all the chemicals with a hazard index.

Table 6-5 Summary of On-site Soil and Sediment Ingestion Risks by Media and Exposure Setting at the Laskin Poplar Oil Site

Exposure Setting	Risk Summary	Major Contributors to Risk
SURFACE SOIL-TRESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration (a)	7 x 10-6	PAHs, PCBs
Average Concentration (b)	3 x 10-7	PAHs, PCBs
PCDD/PCDF Risk	6 x 10-7 to 3 x 10-6	2,3,7,8-TCDD Equivalent
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Calculated Hazard Index (Child)	3	Lead
Average Calculated Hazard Index (Child)	0.2	---
BOILER HOUSE-BOILER ASH-TRESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration (with Arsenic)	8 x 10-7	Arsenic
Highest Detected Concentration (without Arsenic)	7 x 10-11	Bis(2-ethylhexyl)phthalate
Average Concentration (with Arsenic)	NC (c)	
Average Concentration (without Arsenic)	NC	
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Calculated Hazard Index (Child)	14	Lead, Cadmium
Average Calculated Hazard Index (Child)	NC	
BOILER HOUSE-BOILER RESIDUE-TRESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration (with Arsenic)	1 x 10-6	Arsenic
Highest Detected Concentration (without Arsenic)	1 x 10-10	Bis(2-ethylhexyl)phthalate
Average Concentration (with Arsenic)	NC	
Average Concentration (without Arsenic)	NC	
Highest PCDD/PCDF Risk	1 x 10-5 to 1 x 10-6	2,3,7,8-TCDD Equivalent
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Calculated Hazard Index (Child)	23	Lead, Mercury
Average Calculated Hazard Index (Child)	NC	
BOILER HOUSE-BOILER HOUSE SOIL-TRESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration (with Arsenic)	3 x 10-5	PAHs, PCBs, Arsenic
Highest Detected Concentration (without Arsenic)	2 x 10-5	PAHs, PCBs
Average Concentration (with Arsenic)	NC	
Average Concentration (without Arsenic)	NC	
Highest PCDD/PCDF Risk	6 x 10-5 to 5 x 10-6	2,3,7,8-TCDD Equivalent
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Calculated Hazard Index (Child)	433	Lead
Average Calculated Hazard Index (Child)	NC	
BOILER HOUSE-STA[redacted]RESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration	2 x 10-6	Arsenic
Average Concentration	NC	
Highest PCDD/PCDF Risk	2 x 10-6 to 1 x 10-6	2,3,7,8-TCDD Equivalent
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Calculated Hazard Index (Child)	138	Lead, Mercury
Average Calculated Hazard Index (Child)	NC	

Exposure Setting	Risk Summary	Major Contributors to Risk
GREENHOUSE SOIL-TRESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration	4 x 10-7	PAHs
Average Concentration	3 x 10-7	PAHs
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (Child)	1	Lead, Endosulfan
Average Hazard Index (Child)	0.7	Lead
SEEP AND RETENTION POND SEDIMENT-TRESPASS		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration	3 x 10-5	PAHs, PCBs
Average Concentration	6 x 10-6	PAHs, PCBs
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (Child)	3	Lead
Average Hazard Index (Child)	1	Lead
SURFACE AND SUBSURFACE SOIL-CONSTRUCTION (d)		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration	3 x 10-6	PAHs, PCBs
Average Concentration	2 x 10-7	PAHs, PCBs
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index	200	Lead
Average Hazard Index	2	---
SURFACE SOIL (0-2 FEET)-RESIDENTIAL (d)		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration	2 x 10-3	PAHs, PCBs
Average Concentration	7 x 10-5	PAHs, PCBs
PCDD/PCDF Risk	5 x 10-5 to 2 x 10-6	2,3,7,8-TCDD Equivalent
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (Child-1 g/day)	10000	Lead, Cadmium, Chromium, Antimony, Barium, Copper, Manganese, Nickel, Zinc
Maximum Hazard Index (Child-0.1 g/day)	1000	Lead
Maximum Hazard Index (Adult)	200	Lead
Average Hazard Index (Child-1 g/day)	98	Lead, Manganese
Average Hazard Index (Child-0.1 g/day)	10	Lead
Average Hazard Index (Adult)	2	Lead
SURFACE AND [redacted] SOIL (0-14 FEET)-RESIDENTIAL (d)		
EXCESS LIFETIME CANCER RISK		
Highest Detected Concentration	2 x 10-3	PAHs, PCBs
Average Concentration	1 x 10-4	PAHs, PCBs
PCDD/PCDF Risk	5 x 10-5 to 2 x 10-6	2,3,7,8-TCDD Equivalent
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (Child-1 g/day)	10000	Lead, Cadmium, Chromium, Antimony, Barium, Copper, Nickel, Zinc
Maximum Hazard Index (Child-0.1 g/day)	1000	Lead
Maximum Hazard Index (Adult)	200	Lead
Average Hazard Index (Child-1 g/day)	100	Lead
Average Hazard Index (Child-0.1 g/day)	10	Lead
Average Hazard Index (Adult)	2	Lead

See Appendix B for calculations and assumptions.

(a) Maximum calculated risks are based on the highest detected concentration in soil or sediment.

(b) Average calculated risks are based on an area weighted average concentration for soil or sediment.

(c) NC indicates that no area weighted concentrations were calculated. Averages were not calculated because:
1) Data was insufficient to calculate an average.
2) Risks are calculated for each soil or sediment sample analyzed.

(d) Did not include data from Area 3, pits and tanks.

Table 6-6 Summary of Surface Water Ingestion and Ambient Air Inhalation Risks by Media and Exposure Setting at the Laskin Poplar Oil Site

		MAJOR CONTRIBUTORS TO RISK
SURFACE WATER:		
FRESH WATER AND RETENTION PONDS - INGESTION BY TRESPASSER		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (a)	NA	No carcinogens detected
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (a)		
Freshwater Pond	0.0001	---
Retention Pond	0.0007	---
CEMETERY CREEK - INGESTION BY TRESPASSER		
EXCESS LIFETIME CANCER RISK		
Maximum Hazard Index (b)	3 x 10-8 to 2 x 10-12	Vinyl chloride
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (b)	0.005	---
AMBIENT AIR:		
VOLATILIZED CONTAMINANTS - INHALED BY TRESPASSER		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (c)	4 x 10-8	Vinyl chloride, Methylene chloride
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (c)	<0.00001	---
RESUSPENDED MATERIAL - INHALED BY TRESPASSER		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (with Arsenic) (c)	6 x 10-9	Arsenic, PANs
Maximum Calculated Risk (without Arsenic)	1 x 10-9	PANs
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (c)	0.004	---
VOLATILIZED CONTAMINANTS - INHALED BY SITE BOUNDARY RESIDENTS		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (c)	1 x 10-6	Vinyl chloride, Methylene chloride
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (c)	<0.00001	---
RESUSPENDED MATERIAL - INHALED BY SITE BOUNDARY RESIDENTS		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (with Arsenic) (c)	2 x 10-7	Arsenic, PANs
Maximum Calculated Risk (without Arsenic)	5 x 10-8	PANs
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (c)	0.012	---

Table 6-6 (Page 2 of 2)
SUMMARY OF SURFACE WATER INGESTION AND AMBIENT AIR INHALATION RISKS
BY MEDIA AND EXPOSURE SETTING
LASKIN POPLAR OIL SITE

		MAJOR CONTRIBUTORS TO RISK
VOLATILIZED CONTAMINANTS - INHALED BY OFFSITE RESIDENT		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (d)	1 x 10-6	Vinyl chloride, Methylene chloride
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index	0.000000002	---
RESUSPENDED MATERIAL - INHALED BY OFFSITE RESIDENT		
EXCESS LIFETIME CANCER RISK		
Maximum Calculated Risk (with Arsenic) (c)	2.4 x 10-10	Arsenic, PAHs
Maximum Calculated Risk (without Arsenic)	4 x 10-11	PAHs
RATIO OF DAILY INTAKE TO REFERENCE DOSE		
Maximum Hazard Index (c)	0.0002	---

(a) Risks are based on the highest detected concentration in onsite surface water.
(b) Risks are based on the highest predicted concentrations in Cemetery Creek.
(c) Risks are based on the predicted average onsite air concentrations.
(d) Risks are based on the predicted average offsite air concentrations.

Table 6-7 Carcinogenic Potency Factors for Chemicals Detected at the Laskin Poplar Oil Site

CHEMICAL	INGESTION			INHALATION		
	U.S. EPA Carcinogen Classification (a)	Carcinogenic Potency Factor (kg-day/mg)	Source (b)	U.S. EPA Carcinogen Classification (a)	Carcinogenic Potency Factor (kg-day/mg)	Source (b)
Arsenic	A	1.75	HEA/HEED(6-1-88)	A	15	IRIS(3-1-88)
Benzene	A	0.029	IRIS(3-1-88)	A	0.029	SPHEM(10-1-86)
Benzo(a)pyrene	B2	11.5	SPHEM(10-1-86)	B2	8.4	HEA/HEED(6-1-88)
Beryllium	-	-	-	B1	4.86	SPHEM(10-1-86)
Bis(2-chloroethyl)ether	B2	1.1	IRIS(3-1-88)	B2	1.1	IRIS(3-31-87)
Bis(2-ethylhexyl)phthalate	B2	0.014	IRIS(9-7-88)	-	-	-
Cadmium	-	-	-	B1	6.1	IRIS(3-1-88)
Chlordane	B2	1.3	IRIS(3-1-88)	B2	1.3	IRIS(3-1-88)
Chloroform	B2	0.061	HEA/HEED(6-1-88)	-	-	-
Chromium (hexavalent)	-	-	-	A	41	IRIS(3-1-88)
DDT	B2	0.34	IRIS(8-22-88)	B2	0.34	IRIS(8-22-88)
1,2-Dichloroethane (EDC)	B2	0.091	IRIS(3-1-88)	B2	0.091	IRIS(3-1-88)
Dieldrin	B2	16	IRIS(9-7-88)	B2	16	IRIS(9-7-88)
Heptachlor	B2	4.5	IRIS(3-1-88)	B2	4.5	IRIS(3-1-88)
Heptachlor Epoxide	B2	9.1	IRIS(3-1-88)	B2	9.1	IRIS(3-1-88)
beta HCCH (BHC)	C	1.8	IRIS(3-1-88)	C	1.8	IRIS(3-1-88)
gamma HCCH (Lindane)	B2/C	1.33	SPHEM(10-1-86)	-	-	-
Methylene chloride	B2	0.0075	IRIS(5-21-87)	B2	0.014	IRIS(5-21-87)
Nickel	-	-	-	A	1.19	SPHEM(10-1-86)
N Nitrosodiphenylamine	B2	0.0049	IRIS(3-1-88)	-	-	-
PCB	B2	7.7	HEA/HEED(6-1-88)	-	-	-
PAHs	B2/C	11.5	SPHEM(10-1-86)	B2/C	6.11	SPHEM(10-1-86)
2,3,7,8-TCDD (Dioxin)	B2	156000	SPHEM(10-1-86)	B2	-	-
Tetrachloroethene	B2	0.051	SPHEM(10-1-86)	B2	0.0033	HEA/HEED(6-1-88)
1,1,2-Trichloroethane	C	0.057	IRIS(3-1-88)	C	0.057	IRIS(3-1-88)
Trichloroethene	B2	0.011	IRIS(3-1-88)	B2	0.013	IRIS(3-1-88)
2,4,6-Trichlorophenol	B2	0.02	IRIS(3-1-88)	B2	0.02	IRIS(3-1-88)
Vinyl chloride	A	2.3	SPHEM(10-1-86)	A	0.295	SPHEM(10-1-86)

(a) U.S. EPA Carcinogen Classification (IRIS data base 2-10-1988)
- A: Human carcinogen.
- B1: Probable human carcinogen, limited human evidence.
- B2: Probable human carcinogen, sufficient evidence in animals inadequate or no evidence in humans.
- C: Possible human carcinogen.

(b) Sources: SPHEM - "Superfund Public Health Evaluation Manual," Table C-4, (U.S. EPA, 1986)
IRIS - U.S. EPA Integrated Risk Information System (U.S. EPA, 1988b)
HEA/HEED - Quarterly update for HEA and HEED Chemicals (U.S EPA, 1988d)

Table 6-8 Reference Dose Factors for Chemicals Detected at the Laskin Poplar Oil Site

	INGESTION		INHALATION	
CHEMICAL	Reference Dose (RfD) mg/kg/day	(a) Source	Reference Dose (RfD) mg/kg/day	(a) Source
Acetone	0.1	IRIS(3-01-88)	3	SPHEM(10-1-86)
Antimony	0.0004	IRIS(3-01-88)	-	-
Barium	0.05	IRIS(3-01-88)	0.0001	HEA/HEED(6-1-88)
Beryllium	0.005	IRIS(3-01-88)	-	-
Bis(2-ethylhexyl)phthalate	0.02	IRIS(3-01-88)	-	-
2-Butanone (MEK)	0.05	IRIS(3-01-88)	0.09	HEA/HEED(6-1-88)
Cadmium	0.0005	HEA/HEED(6-1-88)	-	-
Carbon disulfide	0.1	IRIS(3-01-88)	-	-
Chlordane	0.00005	IRIS(3-01-88)	-	-
Chlorobenzene	0.027	SPHEM(10-1-86)	0.0057	HEA/HEED(6-1-88)
Chloroform	0.01	IRIS(3-01-88)	-	-
Chromium (hexavalent)	0.005	IRIS(3-01-88)	-	-
Copper	0.037	SPHEM(10-1-86)	0.01	SPHEM(10-1-86)
Free cyanide	0.02	IRIS(11-16-86)	-	-
DDT	0.0005	IRIS(3-01-88)	-	-
Dibutyl phthalate	0.1	IRIS(1-31-86)	-	-
1,1-Dichloroethane	0.12	SPHEM(10-1-86)	0.138	SPHEM(10-1-86)
2,4-Dichlorophenol	0.003	IRIS(3-01-88)	-	-
Diethyl phthalate	0.8	IRIS(3-01-88)	-	-
2,4-Dinitrophenol	0.002	IRIS(3-01-88)	-	-
Endosulfan	0.00005	IRIS(3-01-88)	-	-
Ethylbenzene	0.1	IRIS(3-01-88)	-	-
Heptachlor	0.0005	IRIS(3-01-88)	-	-
Heptachlor Epoxide	0.000013	IRIS(3-01-88)	-	-
Isophorone	0.15	IRIS(6-30-88)	-	-
Lead	0.0014	SPHEM(10-1-86)	-	-
Gamma HCCH (Lindane)	0.0003	IRIS(3-01-88)	-	-
Manganese	0.22	SPHEM(10-1-86)	0.0003	SPHEM(10-1-86)
Mercury (inorganic)	0.002	SPHEM(10-1-86)	0.000051	SPHEM(10-1-86)
Methylene chloride	0.06	IRIS(5-21-87)	-	-
4-Methyl-2-pentanone	0.05	IRIS(3-01-88)	-	-
Methylphenol	0.05	SPHEM(10-1-86)	0.1	SPHEM(10-1-86)
Nickel	0.02	IRIS(3-01-88)	-	-
Pentachlorophenol	0.03	IRIS(6-30-88)	-	-
Phenol	0.04	IRIS(3-01-88)	-	-
Selenium	0.003	SPHEM(10-01-86)	0.001	SPHEM(10-1-86)
Silver	0.003	IRIS(6-30-88)	-	-
Styrene	0.2	IRIS(6-30-88)	-	-
Tetrachloroethene	0.01	IRIS(3-01-86)	-	-
Thallium	0.0004	SPHEM(10-01-86)	-	-
Toluene	0.3	IRIS(3-01-88)	1.5	SPHEM(10-1-86)
1,2,4-Trichlorobenzene	0.02	IRIS(3-01-88)	0.003	HEA/HEED(6-1-88)
1,1,1-Trichloroethane	0.09	IRIS(3-01-88)	0.3	HEA/HEED(6-1-88)
1,1,2-Trichloroethane	0.2	IRIS(3-01-88)	-	-
Trichlorofluoromethane	0.3	IRIS(3-01-88)	0.2	HEA/HEED(6-1-88)
2,4,5-Trichlorophenol	0.1	IRIS(3-01-88)	-	-
Vanadium	0.02	IRIS(11-16-86)	-	-
Xylenes	2	IRIS(3-01-88)	0.4	SPHEM(10-1-86)
Zinc	0.21	SPHEM(10-1-86)	0.01	SPHEM(10-1-86)

(a) Sources: SPHEM - "Superfund Public Health Evaluation Manual," Table C-6, (U.S. EPA, 1986)
IRIS - U.S. EPA Integrated Risk Information System (U.S. EPA, 1988b)
HEA/HEED - Quarterly update for HEA and HEED Chemicals (U.S. EPA, 1988d)

Table 6-9 General Uncertainty Factors in Risk Assessments

Uncertainty Factor	Effect of Uncertainty: May Overestimate Risk	May Underestimate Risk	May Overestimate or Underestimate Risk
The cancer potencies used are upper 95 percent confidence limits derived from the linearized multistage model. This is considered to be unlikely to underestimate the true risk.	X		
Risks are assumed to be additive. Risks may not be additive because of synergistic or antagonistic actions of other chemicals.			X
Cancer potencies and acceptable intake levels are primarily derived using laboratory animal studies and, when available, human epidemiological or clinical studies. Extrapolation of data from high to low doses, from one species to another, and from one exposure route to another may introduce uncertainty. In general, these tend to use conservative assumptions.			X
Not all carcinogenic potencies or acceptable intakes used represent the same degree of certainty. All are subject to change as new evidence becomes available.			X
Assumes absorption is equivalent across species. This is implicit in the development of the acceptable intake and cancer potency factors used in risk assessment.			X

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Table 6-10 Uncertainty Factors Specific to the Laskin Poplar Oil Site Risk Assessment

Uncertainty Factor	Effect of Uncertainty: May Overestimate Risk	May Underestimate Risk	May Overestimate or Underestimate Risk
All of the daily intake of drinking water is from the groundwater source being evaluated.	X		
Not all chemicals found at the site have been assigned critical toxicity values. They are not included in the quantitative assessment.		X	
All intake of contaminants is assumed to come from the medium being evaluated. This does not take into account other contaminant sources such as diet, exposures occurring at locations other than the exposure point being evaluated, or other environmental media which may contribute to the intake of the chemical (i.e., relative source contribution is not accounted for).		X	
Sampling of environmental media may result in loss of contaminants present, especially VOCs.		X	
Exposures through dermal absorption are not quantified.		X	
The public health evaluation is based on Has[redacted] Substance List chemical an[redacted] However, those chem[redacted] represent a subset of t[redacted] possible at the site.		X	
The standard assumptions regarding body weight, period exposed, life expectancy, population characteristics, and lifestyle may not be representative for any actual exposure situation.			X

(page 1 of 2)

Table 6-10 (Page 2 of 2)

Uncertainty Factor	Effect of Uncertainty: May Overestimate Risk	May Underestimate Risk	May Overestimate or Underestimate Risk
This assessment is based on the present understanding of the site characteristics. Conditions at the site or understanding of the site may change over time.			X
The exposures evaluated assume that chemical concentration remains constant over the entire exposure period. Transfer, transformation, and transport processes may alter chemical concentration in a medium.			X
The amount of media intake is assumed to be constant and representative of the exposed population.			X
Assumptions regarding discharge and dilution of groundwater into Cemetery Creek are considered to be worst case.	X		
Trespass exposures are based on infrequent contact with contaminated material.			X
Residential exposures are based on a lifetime of exposure.	X		
Boiler house is assumed to be readily accessible to trespassers.	X		
Risks were summed across exposure pathways.			X

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Table 9-1 Applicaole or Relevant and Appropriate Requirements for Considered Alternatives at the Laskin Poplar Oil Site

Page (1 of 3)

ARAR	ALTERNATIVE 1 NO ACTION	ALTERNATIVE 2	ALTERNATIVE 3A CAP GROUNDWATER CONTROL AND OFFSITE TREATMENT	ALTERNATIVE 3B SOIL COVER GROUNDWATER TREATMENT AND OFFSITE TREATMENT	ALTERNATIVE 4A TREAT TO 3 SOIL CAP AND GROUNDWATER CONTROL	ALTERNATIVE 4B TREAT TO 3 SOIL SOIL COVER AND GROUNDWATER TREATMENT	ALTERNATIVE 5A TREAT TO 4 SOIL CAP AND GROUNDWATER CONTROL	ALTERNATIVE 5B TREAT TO 4 SOIL SOIL COVER AND GROUNDWATER TREATMENT	ALTERNATIVE 6 TREAT TO 0 SOIL
APPROVAL OF AIR POLLUTION PLANS 40 CFR 52	--	[redacted]	THERMAL TREATMENT UNIT WILL MEET AIR EMISSION REQUIREMENTS	THERMAL TREATMENT UNIT AND AIR STRIPPER WILL MEET AIR EMISSION REQUIREMENTS	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 3A
EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS 40 CFR 61	--		THERMAL TREATMENT UNIT WILL MEET AIR EMISSION REQUIREMENTS	THERMAL TREATMENT UNIT AND AIR STRIPPER WILL MEET AIR EMISSION REQUIREMENTS	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 3A
CLEAN WATER ACT									
SEC form 308	--	--	--	DISCHARGE OF TREATED GROUNDWATER WILL COMPLY WITH ARARDNE WATER QUALITY PLAN	-	SEE ALTERNATIVE 3B		SEE ALTERNATIVE 3B	
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT PROGRAM 40 CFR 122.44 40 CFR 122.21 40 CFR 125.100	--	--	--	GROUNDWATER TREATMENT UNIT WILL MEET WATER DISCHARGE STANDARDS	--	SEE ALTERNATIVE 3B	-	SEE ALTERNATIVE 3B	
WATER QUALITY STANDARDS 40 CFR 131	WATER QUALITY STANDARDS ARE NOT EXPECTED TO BE VIOLATED	SEE ALTERNATIVE 1	SEE ALTERNATIVE 1	GROUNDWATER TREATMENT UNIT WILL MEET WASTE LOAD ALLOCATIONS	SEE ALTERNATIVE 1	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 1	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 1
SEC PROCEDURES 40 CFR 130			--	GROUNDWATER TREATMENT UNIT WILL MEET SEC PROCEDURES	--	SEE ALTERNATIVE 3B	-	SEE ALTERNATIVE 3B	
RCRA									
CLOSURE REQUIREMENTS 40 CFR 264.111 111	-	WILL NOT MEET CAP REQUIREMENTS OF LOWER PERMEABILITY	WILL MEET CAP REQUIREMENTS OF LOWER PERMEABILITY	SEE ALTERNATIVE 3	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3	CLEAN CLOSURE AFTER ONSITE CONTAMINATED MATERIAL IS REMOVED
STORAGE CONTAINERS 40 CFR 264.170-178	--	--	TEMPORARY STORAGE OF CONTAMINATED MATERIAL PRECEDING FOR THERMAL TREATMENT WILL MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A
STORAGE TANK 40 CFR 264.190-200	--	VAULT FOR ONSITE CONTAMINATED MATERIAL WILL BE SUBJECT TO THESE REQUIREMENTS	SEE ALTERNATIVE 3 STORAGE OF MATERIAL FOR THERMAL TREATMENT AND VAULT FOR UNTREATED ONSITE CONTAMINATED MATERIAL WILL BE SUBJECT TO THESE REQUIREMENTS	SEE ALTERNATIVE 3	STORAGE OF MATERIAL FOR THERMAL TREATMENT AND VAULT FOR UNTREATED ONSITE CONTAMINATED MATERIAL WILL BE SUBJECT TO THESE REQUIREMENTS	SEE ALTERNATIVE 4A	SEE ALTERNATIVE 4A	SEE ALTERNATIVE 4A	SEE ALTERNATIVE 4A

ARAR DOCUMENTATION

ARAR	ALTERNATIVE 1 NO ACTION	ALTERNATIVE 2 SOIL COVER	ALTERNATIVE 3A CAP, GROUNDWATER CONTROL AND DRUM TREATMENT	ALTERNATIVE 3B SOIL COVER, GROUNDWATER TREATMENT AND DRUM TREATMENT	ALTERNATIVE 4A TREAT TO [illegible] PPM, CAP AND GROUNDWATER CONTROL	ALTERNATIVE 4B TREAT TO [illegible] PPM, SOIL COVER AND GROUNDWATER TREATMENT	ALTERNATIVE 5A TREAT TO [illegible] PPM, CAP AND GROUNDWATER CONTROL	ALTERNATIVE 5B TREAT TO [illegible] PPM, SOIL COVER AND GROUNDWATER TREATMENT	ALTERNATIVE 6 TREAT TO [illegible] PPM
[illegible]		SURFACE [illegible]	SEE ALTERNATIVE 2	SEE ALTERNATIVE 2	SEE ALTERNATIVE 2	SEE ALTERNATIVE 2	SEE ALTERNATIVE 2	SEE ALTERNATIVE 2	SEE ALTERNATIVE 2
[illegible]			ANY NONDELISTABLE RESIDUAL WILL BE TAKEN TO A RCRA PERMITTED FACILITY	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A
[illegible]			ONSITE THERMAL TREATMENT UNIT AND STORAGE AREA WILL MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A
[illegible]		--	OFFSITE DISPOSAL OF RESIDUES WILL MEET THESE REQUIREMENTS. NOT APPLICABLE FOR SHORT-TERM CONTAINMENT OF DRUM CONTAMINATED MATERIAL	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A
[illegible]		SEE FEDERAL STANDARDS	--	GROUNDWATER TREATMENT UNIT WILL MEET WATER DISCHARGE STANDARDS	--	SEE ALTERNATIVE 3B	--	SEE ALTERNATIVE 3B	--
[illegible]		EMISSIONS DURING CONSTRUCTION SHOULD MEET THESE REQUIREMENTS	SEE ALTERNATIVE 2 THERMAL TREATMENT EMISSIONS WILL ALSO MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3A AIR STRIPPER EMISSIONS WILL ALSO MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3B	SEE ALTERNATIVE 3A
[illegible]			ONSITE THERMAL TREATMENT UNIT WILL MEET THESE REQUIREMENTS	ONSITE THERMAL TREATMENT UNIT WILL MEET THESE REQUIREMENTS	ONSITE THERMAL TREATMENT UNIT WILL MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 3A	SEE ALTERNATIVE 4	SEE ALTERNATIVE 3A
[illegible]		WILL NOT MEET CAP REQUIREMENTS OF CLOSURE REGULATIONS. VAULT FOR DRUM-CONTAMINATED MATERIAL WILL BE SUBJECTED TO THESE REQUIREMENTS	WILL MEET CAP REQUIREMENTS. VAULT FOR DRUM CONTAMINATED MATERIAL WILL BE SUBJECTED TO THESE REQUIREMENTS. ONSITE THERMAL TREATMENT UNIT WILL MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3 ONSITE THERMAL TREATMENT UNIT WILL MEET THESE REQUIREMENTS	SEE ALTERNATIVE 3A ONSITE THERMAL TREATMENT UNIT AND STORAGE AREA WILL MEET THESE REQUIREMENTS	SEE ALTERNATIVE 4A	SEE ALTERNATIVE 4A	SEE ALTERNATIVE 4A	SEE ALTERNATIVE 4A

NOTES:
SEE TABLES IN APPENDIX A FOR FULL DESCRIPTION OF ARARS
ONLY THOSE REGULATIONS LISTED IN APPENDIX A THAT ARE ARARS ARE PRESENTED IN THIS TABLE
-- MEANS THE REGULATION IS NOT AN ARAR FOR THE ALTERNATIVE

APPENDIX A

ADMINISTRATIVE RECORD INDEX

Page No. 1
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ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

DOC	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	TYPE
	1	00/00/00	Notes re Interlake Steamship			Handwritten [illegible]
	1	00/00/00	Summary of Quantities of Waste Oils picked up by Laskin Oil from Commercial Shearing			Other
	1	00/00/00	Summary of Shipments to Laskin Oil			Other
	1	00/00/00	USEPA Response to Request for Information from Sevan	JMcGhee - USEPA	CAventrick - Sevan	Correspondence
	1	00/00/00	USEPA scheduling of meeting of "primary" generators for 10:00 am, July 1, 1988.	Steven Leifer - USEPA	Perfection Corporation	Correspondence
	2	00/00/00	Handwritten note re conversation with - Haynes re documents			Handwritten
	2	00/00/00	Request for Information	BGConstantelos - USEPA	JMullis - SP	Correspondence
	2	00/00/00	Partial Organization Chart (Ref. For Laskin Poplar Site) titled "Exhibit D".	Kaiser Aluminum		Other
	3	00/00/00	Notice Letter	EAKurent for MABrown - USEPA	BAJohnson - SM	Correspondence
	3	00/00/00	Notice letter to first tier of PRPs	EAKurent for MABrown - USEPA	BAJohnson - GAC	Correspondence
	4	00/00/00	Handwritten notes of various phone calls between USEPA and Atac			Communication Record
	5	00/00/00	[redacted] of wastes sent, dates amounts			Other
	5	00/00/00	Various manifests detailing shipments to Laskin Waste Oil.	Litton Great Lakes		Manifests
	6	00/00/00	Various POs between Copperweld and Laskin			Accounting Documents
	6	00/00/00	Various checks and receipts between Laskin Waste Oil Service and Summitt National Liquid Service			Accounting Documents

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
6	00/00/00	Various Agreements between Copperweld and Laskin			Contracts
7	00/00/00	Various checks between Laskin Waste Oil and United Chemicals			Accounting Documents
8	00/00/00	Various manifests and checks from Poplar Oil Co. to National Forge.			Manifests
8	00/00/00	Material Data Safety Sheet titled "Exhibit B" and Conversation Notes of call from A.Laskin titled "Exhibit C"	Kaiser Aluminum		Sampling Data
9	00/00/00	Various receipts issued to Kaiser Aluminum & Chemical Corp. by Poplar Oil Co., Inc.	Poplar Oil Co.	Kaiser Aluminum	Accounting Documents
9	00/00/00	Various checks issued by Laskin Waste Oil Service to North East Service Plaza, Inc.			Accounting Documents
9	00/00/00	Various checks between General Refractories and Laskin			Accounting Documents
10	00/00/00	Checks, POs re ABS Industries			Accounting Documents
11	00/00/00	[redacted] cancelled checks [redacted] Waste Oil Service [redacted] ley, Inc.			Accounting Documents
11	00/00/00	[redacted] checks, POs between Buffalo Molded Plastics and Laskin Waste Oil Service			Manifests
12	00/00/00	Various manifests, shipping documents and checks from Laskin Waste Oil Service to Perry Ship Building.			Accounting
13	00/00/00	Various checks, POs,			

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			and B/Ls re Tennessee Gas Pipeline Co.			Documents
	13	00/00/00	Various checks between K-Mart Automotive and Laskin 1976 to 1979			Accounting Documents
	13	00/00/00	Various POs between East Ohio Gas Co. and Laskin			Accounting Documents
	14	00/00/00	Various receipts, manifests and checks between Laskin Waste Oil Service and Pittsburgh & Lake Erie Railroad			Manifests
	15	00/00/00	Various manifests and receipts from Laskin Waste Oil Service to Midwest Rubber Reclaiming Co. for waste oil and water.			Manifests
	16	00/00/00	Various checks between Laskin Waste Oil Service and Akron Motor Freight; 1976 to 1979			Accounting Documents
	16	00/00/00	Various checks and manifests between Standard Transformer and Laskin Waste Oil Service.			Manifests
	16	00/00/00	Various manifests detailing waste oil shipments to Laskin from the Locke Machine Co.			Manifests
	17	00/00/00	[redacted] invoices re [redacted] Steamship and [redacted]			Accounting Documents
	18	00/00/00	[redacted] manifests of waste oil shipments to Poplar Oil Co.	Matlack, Inc.		Manifests
	20	00/00/00	Various checks from Laskin Waste Oil Service to Kimmel Pontiac			Accounting Documents
	21	00/00/00	Various shipping orders and POs re Laskin Waste			Accounting Documents

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			Oil Service and Bevan Inc.			
	21	00/00/00	Various checks, POs, Deposit and Cash records of transactions between Steel Ind. and Laskin Waste Oil Service			Accounting Documents
	22	00/00/00	Documents produced in response to requests 5g, 9 and 12			Other
	25	00/00/00	Various checks between Diver-Steel City Auto Crushers and Laskin			Accounting Documents
	25	00/00/00	Various manifests, checks and receipts between RP&G Valve and Laskin Waste Oil			Manifests
	29	00/00/00	Various POs and check register evidencing transactions between General Electric and Laskin Oil Waste			Accounting Documents
	29	00/00/00	Various manifests, receipts and checks between Laskin Waste Oil Servive and the Pittsburgh & Conneaut Cock co.			Manifests
	30	00/00/00	Various manifests, check copies and account payable sheets relating waste oil shipments to Laskin Oil [redacted] from Mercer Forge, Inc.			Manifests
	40	00/00/00	[redacted] Documents of [redacted] liquids shipped [redacted] Coppers Company for the year 1978.			Manifests
	43	00/00/00	Various manifests and statesents from Poplar Oil Co. to Ohio Broach & Machine Co.			Manifests
	49	00/00/00	Various manifests, checks and test results from Rockwell International Corp.			Manifests

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			to Laskin Waste Oil Service.			
52		00/00/00	Various checks, POs etc showing transactions between Conrail and Laskin Waste Oil			Accounting Documents
53		00/00/00	Various checks, POs etc between General Electric and Laskin			Accounting Documents
58		00/00/00	Documents relating to Policy & Procedure, Records Center Procedure and Records Schedule titled "Exhibit F".	Kaiser Aluminum		Other
59		00/00/00	Various checks, POs, Invoices etc between Laskin Waste Oil Service and Browning-Ferris			Accounting Documents
61		00/00/00	Manifests, bid documents, test results and contracts between Rockwell International Corp. and Laskin Waste Oil Service.			Manifests
61		00/00/00	Request for Participation in Response Activities with supporting documents titled "Exhibit E".	R.Perry-USEPA Wash., D.C.	R.W.Turner-Kaiser Alumin.	Correspondence
63		00/00/00	Various POs and Invoices [redacted] Coces and Laskin			Accounting Documents
65		00/00/00	[redacted] Chain of Custody with cover letter [redacted] 7/17/87			Other
76		00/00/00	Various POs between Copperweld Steel Co. and Laskin Waste Oil			Accounting Documents
82		00/00/00	Various checks, POs re Linde Division, Ashtabula, OH			Accounting Documents
83		00/00/00	Various checks, POs -			Accounting

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			between Commercial Shearing and Laskin Waste Oil Service			Documents
	141	00/00/00	Various manifests, invoices and bills of ladings from Laskin Waste Oil Service to Perfection Corp.			Manifests
	142	00/00/00	Various checks, PCs, re TRW, Minerva, OH			Accounting Documents
	151	00/00/00	Documents produced in response to requests 10g and 10i			Other
	205	00/00/00	Various checks and invoices between GN and Laskin			Accounting Documents
	351	00/00/00	Various court documents re U.S. of America v. Alvin Laskin, et al - Answer of 3d Party Defendant WCI - 10/31/86 - Answer of 3d Party Defendant Matlack 11/14/86 - Answer of 3d Party Defendant Kaiser Aluminum & Chemical Co. - 11/04/86 - Answer and Affirmative Defenses of 3d Party Defendant [redacted] - 11/13/86 [redacted] of 3d Party [redacted] Pittsburgh & Lake Erie Railroad 10/31/86 - Answer of 3d Party Defendant Kimmel Pontiac 10/31/86 - Answer of 3d Party Defendant Perry Ship-Building Corp. - 10/31/86			Pleadings/Orders

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
		- Answer of 3d Party Defendant TRW - Undated			
		- Answer of 3d Party Defendant Rubber Reclaiming Co. - Undated			
		- Answer of 3d Party Defendant National Forge Co. - Undated			
		- Answer of 3d Party Defendant Ohio Broach & Machine Co. - Undated			
		- Answer of 3d Party Defendant Locke Machinery Co. - Undated			
		- Answer of 3d Party Defendant ABB - 3/4/86			
		- Answer of 3d Party Defendant American Cyanamid - Undated			
		- Answer of 3d Party Defendant Anchor Motor Freight 11/14/86			
		- Answer and Affirmative Defenses of 3d Party Defendant BMCI - 11/12/86			
		- Answer of 3d Party [redacted] Chevron - Undated			
		[redacted] of 3d Party [redacted] Conrail - 10/31/86			
		- [redacted] of 3d Party Defendant Copperweld Undated			
		- Answer of 3d Party Defendant General Electric Undated			
		- Answer of 3d Party Defendant Interlake			

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	Steamship Co. - Undated - Answer of 3d Party Defendant Litton Great Lakes Corp. - 3 17 87			
42[illegible]	Various court documents re U.S. of America v. Alvin F. Laskin et al - ABS Industries Response to 3d Party Plaintiffs 1st Set of Interrogatories - 9/9/86 - Response of 3d Party Defendant Kaiser Alum. to Requests for Production of Documents - American Cyanamid Response to 3d Party Plaintiffs 1st Set of Interrogatories and Requests for Production -11/12/86 - Response of 3d Party Defendant WCI to 1st Set of Interrogatories and Request for Production of Documents 11/11/86 - Anchor Motor Freight's 1st Set of Interrogatories, Requests for Admissions and [illegible] for Production of [illegible] to 3d Party [illegible] - 12/19/86 [illegible] of 3d Party [illegible] UNOCAL to 1st Set of Interrogatories and Request for Production Undated - Anchor Motor Freight's Amended Response to 1st Set of Interrogatories and Requests for Production of Documents - 11/12/86			Pleadings Order

ADMINISTRATIVE RECORD INDEX
Lasalin/Polar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE

- 3d Party Defendant United Products Co. Notice of Filing of Chapter 11 and of Automatic Stay - 8/27/86

- 3d Party Plaintiffs Motion to Add Parties, Dismiss Parties, Remove Duplicate Names of Parties and to Correct the Caption as to Certain Parties 8/5/87

- Conrail's Notice of Correction of Typographical Error in 1st Set of Interrogatories, Requests for Admission and Requests for Production of Documents Propounded to 3d Party Plaintiffs - 10/15/86

- Answer of 3d Party Defendant Midwest Rubber to Interrogatories 8 through 54

- Conrail's Response to 1st Set of Interrogatories and Requests for Production of Documents to 3d Party Plaintiffs 11/7/86

- Petroleum Exception Cos. [redacted] to Case Mgmt Order

[redacted]rwald Steel Company's Responses to Interrogatory Nos. 8-55 and Requests for Production Nos. 2-21 - 11/25/86

- Notice of Appearance of Attys for Ohio Broach & Machine Co. - 9/24/86

- Notice of Appearance of

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			Att/s for Ferry Shipbuilding 10 31 86			
			- Motion to Waive requirement of Local Rule 11-13-86			
			- Response of Wallace to 1st Set of Interrogatories and request for Production of Documents - 11/12/86			
			- Perfection Corp Response to 1st Set of Interrogatories and Requests for Production of Documents - 11/14/86			
			- Notice of Withdrawal of Counsel for 3d Party Defendant Ferry Shipbuilding			
			- Kaiser Alum. Answer to 1st Set of Interrogatories 11-19-86			
			- Wallack's 1st Set of Interrogatories, Requests for Admissions and Requests for Production of Documents 1/3/87			
			- Perfection Corp's 1st Set of Interrogatories, Requests for Admissions and Requests for Production of Documents 1/28/87			
850	00/00/00		[redacted] Data [redacted] 2184, 2056, [redacted] 905 7595			Sampling Data
2	77/00/00		Various checks between Cochran Oil Co. and Laskin Waste Oil Service			Accounting Documents
1	77/07/26		One cancelled check from Laskin Waste Oil Service to Andy Skidmore.			Accounting Documents
6	78/00/00		Various checks and			Accounting

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
		Invoices between Laskin Waste Oil Service and Sanitary Equipment			Documents
1	78/[illegible]	Balance due on account of 6/[illegible]/78	Browning-Ferris	Laskin Waste Oil Service	Correspondence
1	78/[illegible]	One check issued by Laskin Waste Oil Service to O & P Oil & Gas Inc.	Laskin Waste Oil Servive	O & P Oil & Gas	Accounting Document
3	78/08/09	Unexecuted Contract between Tennessee Gas Pipeline Co. and Laskin Waste Oil	RChures - Tennessee Gas Pipeline	Laskin Oil Service	Contracts
1	78/09/07	Letter agreement re disposal of waste creosote	Browning-Ferris	Laskin Waste Oil Service	Correspondence
1	78/[illegible]/13	Check between Jenny Tune and Laskin			Accounting Documents
4	78/11/1[illegible]	TRW evaluation of feasibility of incineration of mineral oil containing PCBs at levels up to 500 ppm	JWHabersoa - TRW	DGarry - EPA	Correspondence
2	78/11/16	Sampling results from two sludge samples	Erie Testing Laboratories	Kaiser Aluminum & Chem.	Sampling/Data
1	78/11/27	Letter advising that Sulveer 1025 does not contain any PCB's.	J.Taylor - Standard Oil Co.	Mark Shears-Perfection Co	Correspondence
1	79/02/10	Check from AFLaskin of Poplar Oil Co. to Union Oil in the amount of [redacted]	AFLaskin - Poplar Oil Co.	Union Oil	Other
1	79/04/14	[redacted] from Poplar Oil Co. t[redacted] Machine Co.	Poplar Oil Co.	Locke Machine Co.	Accounting Documents
1	79/04/25	Jefferson firm serious polluter, U.S. says in suit	Cleveland Plain Dealer		Newspaper Article
1	79/06/05	Oil Concerning PCBs	RABamroth - UCC Metals Division	FXFusaro - UCC	Memorandum
1	79/06/08	Denial of handling bulk quantities of oil containing PCBs	RFMataruski - Browning-Ferris	AFLaskin - Laskin Waste	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
4	79/10/11	PCB in Mineral Oil Analysis	MEPiese - TSI	RSolby - UCC	Sampling Data
12	79/10/12	Enclosing product information sheets and confirming that UCC waste oil contains no PCBs	RAGannott - UCC	MLaskin	Correspondence
10	79/10/21	Accounting Docs. re: shipments of waste oils to Poplar with cover sheet titled "Exhibit A".	Kaiser Aluminum		Accounting Documents
6	80/02/04	Shipping authorization and testing results for Solid Waste PCB Capacitors and Oil-water Waste Sludge	CECOS Intl., Inc.	Leo Marcis-Kaiser Aluminum	Contract
1	80/02/25	Record of phone conversation with Laskin's atty re source of PCB contamination			Communication Record
1	80/02/27	BFI's site on Pine St.	JLBurgan - OEPA	DDeNiro - OEPA	Memorandum
1	80/03/05	BFI's transfer station located on Pine St.	FJLBurgan - OEPA	DDeNiro - OEPA	Memorandum
1	80/05/06	Contract for Oil/Water removal	Kaiser Aluminum Co.	Poplar Oil Co.	Contract
1	80/09/15	Directive not to use Laskin Waste Oil Service	WEBogdan - TRW	BWhite - TRW	Memorandum
3	81/00/00	Letters regarding [illegible]	RMoney - BMPI	Laskin Waste Oil Service	Correspondence
33	81/05/04	[illegible] Ground Water	KCMast - Soil Testing Services	DFascke - USEPA	Reports/Studies
4	81/08/00	Product Information sheet on Energol HLP Lubricating Hydraulic Oil	SOHIO, Boron Oil Co., & BP		Other
1	81/08/18	Certificate of Analysis for 1-sample for EP-toxicity of waste oil drum contents	Microbac Laboratories	Kaiser Aluminum	Sampling/Data
10	81/11/11	Certificate of Analysis	Microbac Laboratories	Kaiser Aluminum	Sampling/Data

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			for Kaiser 40" Press Sludge and RCRA Waste Characterization Report			
	1	81/12/23	Enclosing sampling data from BFI storage tank	Stalnaker - OEPA	McGhee - USEPA	Correspondence
	2	82/[illegible]/00	Notes of telcons between GM and USEPA			Communication Record
	3	82/[illegible]/00	Notes of phone conversations with MFPhillips re TRW document submittal and request for meeting			Communication Record
	4	82/[illegible]/00	Notes of various phone calls between USEPA and Beard in July and August 1982			Communication Record
	7	82/[illegible]/11	Notes of various phone conversations between BFI and USEPA in June and July 1982			Communication Record
ST		82/03/15	Revised Proposal for Remedial Action Plan	SClawacki - OEPA	DJO'Conner - USEPA	Other
	1	82/06/12	Phone conversation with Midwest Rubber Co. where they agree to submit records related to Laskin.	USEPA		Communication Record
	1	82/06/15	Record of phone conversation between USEPA and Bekan Inc.			Communication Record
	1	82/06/15	[redacted] phone conversation [redacted]chards Rather and			Communication Record
	1	82/06/16	Record of phone conversation between General Refractories and USEPA			communication record
	1	82/06/16	Phone conv. with Locke Machine Co., Leroy Davis-Plant Mgr. agreeing to submit records related to Laskin.	USEPA		Communication Record

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	1	82/06/16	Laskin/Poplar Oil Phone Conversation with Generations	USEPA	James Alarcon-Kaiser Aluminum	Communication Record
	1	82/06/17	Record of phone conversation with CCSmith - UCC re Ashtabula facility			Communication Record
	1	82/06/17	Denial of any guilt by Ohio Smelting & Machine Co. through their counsel of contributing to any violations.	A.McLardon-Weston, Hurd, et al.	Catherine Fox - USEPA	Correspondence
	1	82/06/17	Memo relating phone conversation with UCC re meeting and what information needed to demonstrate nonliability	BSmith - USEPA	CFox - USEPA	Memorandum
	1	82/06/17	Record of phone conversation with Thomas Bungardean, atty. for Koppers Co.	Tendleton Smith - USEPA		Communication Record
	1	82/06/17	Phone conversation with Matlack, Inc. agreeing to submit records related to Laskin.	USEPA		Communication Record
	1	82/06/17	Phone conversation with George Wells of National Forge where he agrees to submit records of any company dealings with Laskin.	USEPA		Communication Record
	1	82/06/17	[redacted]versation with [redacted] & Machine Co. [redacted] agree to submit [redacted]ds related to Laskin and requests a meeting.	USEPA		Communication Record
	1	82/06/17	Phone conversation with Charles Patterson, Chief Engineer - Mercer Forge who agrees to submit records related to Laskin.	USEPA		Communication Record
	3	82/06/17	Confirming agreements made re Superfund claim	CCSmith - UCC	CFox - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
3 82/06/17	Response to 6/16/82 teleconference with records.	LeRoy Davis - Locke Machine Co.	Catherine Fox - USEPA	Correspondence
1 82/06/18	Record of phone conversation between USEPA and BFP.			Communication Record
1 82/06/18	Record of phone conversation between Commercial Shearing and USEPA			Communication Record
1 82/06/18	Record of phone conversation between General Electric and USEPA			Communication Record
1 82/06/18	Record of phone conversation between Copperweld and USEPA			Communication Record
1 82/06/18	Confirming agreement to send documents	CLFox - USEPA	HEbermaster - Gen Refract	Correspondence
1 82/06/18	Enclosing PRP list and confirming agreement to send documents	CLFox - USEPA	TJMahoney - Pickands Mather	Correspondence
1 82/06/18	Confirmation of phone conversation of 6/16/82 where Midwest Rubber Reclaiming Co. agreed to send any documents relating to Laskin.	Catherine Fox - USEPA	R. Isringhausen-Midwest Rubb	Correspondence
1 82/06/18	Confirmation by letter of phone conversation of 6/17/82 where National Forge agrees to submit [illegible]mentation of dealings [illegible]kin.	George Wells - National Forge	Catherine Fox - USEPA	Correspondence
1 82/06/18	[illegible]ing telcon and request to review USEPA data re Laskin Waste Oil	TPPendergast - Conrail	RGrimes - USEPA	Correspondence
1 82/06/18	Record of phone conversation between USEPA and Gary Weaver of Atec Inc.	USEPA		Communication Record
1 82/06/19	Enclosing PRP list	CLFox - USEPA	CCSmith - UCC	Correspondence
1 82/06/19	Letter confirming phone	Catherine Fox - USEPA	Allen	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			conversation of 6/17/82 in which company agreed to send copies of all documents relating to Laskin Poplar.		Weight-Watchers, Inc	
	1	82/06/19	Confirmation of phone conversation of 6/17/82 in which National Forge agreed to send the USEPA documents of any dealings they may have had with Laskin.	Catherine Fox - USEPA	S.Weaver-National Forge	Correspondence
	1	82/06/19	Letter enclosing list of "primary" group PRP list, Copy of Koppers invoices and pleading cover sheets. Confirms phone conversation of 6/17/82 where Koppers agrees to send all documents relating to Laskin-Poplar.	Catherine Fox - USEPA	Thomas Bergundthal-Koppers	Correspondence
	2	82/06/19	Confirmation Letter re: telephone conversation of 6/17/82 where it was agreed that Mercer Forge will send all documents relating to any transactions with Laskin.	Catherine Fox - USEPA	P. Patterson-Mercer Forge	Correspondence
	1	82/06/21	Record of phone conversation between Copes and USEPA			Communication Record
	1	82/06/21	Record of phone conversation between BLittle - BFI and [redacted]			Communication Record
	1	82/06/21	[redacted] confirming BFPI's agreement to send documents re transactions with Laskin Waste Oil Service	CLFox - USEPA	BJohnson - BFI	Correspondence
	1	82/06/21	Confirming phone conversation in which Atec agreed to produce documents	CLFox - USEPA	SWeaver - Atec Inc.	Correspondence
	1	82/06/21	Enclosing PRP list and confirming agreement to send documents relating	CLFox - USEPA	JMoran - Commercial Shrng	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			to transactions with Laskin Oil			
	1	82/06/21	Enclosing PRP list	CLFox - USEPA	WPhillips - TR.	Correspondence
	1	82/06/21	Letter confirming telephone conversation in which Kaiser agrees to send all docs. relating to transactions with Poplar Oil Co.	Catherine Fox - USEPA	James [illegible] - Kaiser Alum.	Correspondence
	5	82/06/21	Results of analysis of oil with sludge and water from National Forge Co.	Daniel Norman-FrontierChem.Waste	J.Strub-National Forge	Sampling Data
	1	82/06/21	Letter stating that there was no agreement by Matlack, Inc. to any matter regarding Laskin Poplar.	Allen Krauft - Matlack, Inc.	Catherine Fox - USEPA	Correspondence
	1	82/06/22	Phone con. with Alan [illegible] atty. for Litton Industries who denies any involvement with Laskin.	USEPA		Communication Record
	1	82/06/22	Phone conversation with Ron Leslie of Rockwell Int. where they request a meeting and agree to furnish any documents relating to Laskin.	USEPA		Communication Record
	1	82/06/23	Record of phone conversation between GM and USEPA			Communication Record
	1	82/06/24	[illegible]ing PRP list	CLFox - USEPA	BLittle - SFI	Correspondence
	1	82/06/24	[illegible]ing PRP list and [illegible]ing agreement to [illegible] documents	CLFox - USEPA	SRead - Gen Electric	Correspondence
	1	82/06/24	Phone call: left message with Berguncer of Koppers re: meeting	Catherine Fox - USEPA		Communication Record
	1	82/06/24	Confirming telcon and request for documents	JTMcPhee - USEPA	Jackson - Copperweld	Correspondence
	1	82/06/24	GM reviewing wastes sent	LFCharla - GM	CFox - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

DOC#	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			to Laskin and intent to attend meeting			
	1	82/06/25	Phone call from Moore..: will attend meeting, looking for records, will cooperate.	Catherine Fox-USEPA		Communication Record
	1	82/06/25	Confirmation of phone conversation requesting copies of Kaiser documents.	James Glan..-Kaiser Aluminum	Catherine Fox-USEPA	Correspondence
	1	82/06/28	Confirming meeting	JMcPhee - USEPA	CAvenom.. - Ba..an	Correspondence
	1	82/06/28	Confirming meeting	JMcPhee - USEPA	CCEaton - UCC	Correspondence
	1	82/06/28	Confirming meeting	JMcPhee - USEPA	JMoran - Commercial Shrng	Correspondence
	1	82/06/28	Confirming meeting	JMcPhee - USEPA	LCharla - GP	Correspondence
	1	82/06/28	Confirming meeting	JMcPhee - USEPA	SPeac - Gen Electric	Correspondence
	1	82/06/28	Confirming meeting	JMcPhee - USEPA	TJMartne. - Pickands Math	Correspondence
	1	82/06/28	Confirming scheduled meeting	JMcPhee - USEPA	WRPhillips - TRW	Correspondence
	1	82/06/29	Follow-up letter to phone conversation setting meeting to discuss voluntary cleanup for July 1, 1982.	Jonathan McPhee - USEPA	R.McLandrich-Weston, Hurd,	Correspondence
	1	82/06/29	Confirmation of meeting [redacted] for 7/1/82 to [redacted] voluntary cleanup.	Jonathan McPhee - USEPA	Thomas Bergundar--Rogers	Correspondence
	1	82/06/29	[redacted] of samples	PWRekshan - CAL	PDBrick	Correspondence
	1	82/06/29	Phone conversation with David Jacobson of Perfection Corp. where they request a meeting with the USEPA and agree to submit any documents concerning Laskin.	USEPA		Communication Record
	2	82/06/29	Response to telephone conversation of 6/16/82	R. Isringhaus-MidwestRubberReclaimin	Catherine Fox - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			and letter of 6 19 86.			
	6	86/06/09	Cover letter for Atec production of documents to USEPA	STweaver - Atec Inc.	CLFox - USEPA	Correspondence
	1	86/07/16	Record of telcon and request for documents by Gen Electric			Communication Record
	1	86/07/16	Enclosing documents	JMcPhee - USEPA	SRead - Gen Electric	Correspondence
	3	86/07/06	Request for documents showing transactions between Conrail and Laskin Waste Oil Service	JDieterle - Conrail	JMcPhee - USEPA	Correspondence
	1	86/07/07	Record of telcon between Cohen and USEPA			Communication Record
	1	86/07/07	Request for documents showing liability of Berlan	CLFranklin - Berlan	JMcPhee - USEPA	Correspondence
	1	86/07/ 7	Phone discussion of invoices and samples with Bergunder of Koppers Co.	Catherine Fox - USEPA		Communication Record
	1	86/07/08	Phone con. concerning Bergunder of Koppers Co. misgivings about upcoming meeting.	Catherine Fox - USEPA		Communication Record
	1	86/07/08	Gave over the phone the time and address of meeting [redacted] Bergunder of Koppers Co. [redacted]ry.	Catherine Fox - USEPA		Communication Record
	1	86/07/08	[redacted]onversation with Mary [redacted]son of Mercer Forge. Mercer has questions about sampling protocols, & list of USEPA waste disposal sites. Says Accounting is looking for Laskin documents.	Catherine Fox - USEPA		Communication Record
	1	86/07/09	Record of telcon re status of GE record search			Communication Record

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
2	82/07/09	Response to letter of July 8, 1982 and enclosed approvals	RCVlaun - USCG	Richards Mather	Correspondence
2	82/07/12	Request by Perfection Corp. that they be treated as generator of benign oil as others have been treated.	Clay Hugh - Arter & Hadden	Catherine Fox - USEPA	Correspondence
1	82/07/13	Phone conversation with Gary Patterson of Mercer Forge telling him he will receive a copy of procedures for sampling.	Catherine Fox - USEPA		Communication Record
1	82/07/13	Phone conversation with Tony Rutter-USEPA asking him to check and locate guidelines on techniques for outside laboratory testing of samples.	Catherine Fox - USEPA		Communication Record
1	82/07/13	Cover letter to submittal of accounting records dealing with Laskin Waste Oil and Poplar Oil Co.	Gary Patterson-Mercer Forge	Catherine Fox - USEPA	Communication Record
25	82/07/13	Enclosing Mobil Material Safety Data Bulletins on Rarus 37, Mobil DTE Oil Light, Mobil DTE Oil Medium, Mobil DTE Oil Heavy Medium, Mobil DTE Extra Heavy, Mobil [illegible] A67	EMLadov - Mobil Oil Corp.	JBursley - UCC Linde Div	Correspondence
1	82/07/14	[illegible] meeting with [illegible] Mather			Meeting Notes
1	82/07/14	Follow up letter to that of 6/18/82 by National Forge giving waste quantities.	George Wells - National Forge	Catherine Fox - USEPA	Correspondence
2	82/07/14	Copperweld Responce to Request for Information	LBGriffith - Atty for Copperweld	JTMcPhee - USEPA	Correspondence
2	82/07/15	Submittal of documents	HPEberharter - General Refractories	CJFox - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
2	82/07/16	Enclosing documents detailing BMPI's transactions with Laskin Waste Oil Service	BJJohnson - BMPI	CLFox - USEPA	Correspondence
1	82/07/17	Record of phone conversation between Commercial Shearing and USEPA			Communication Record
1	82/07/19	Cover letter only to submittal of a draft USEPA document entitled "The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oil.	Catherine Fox - USEPA	M.Patterson-Parker Forge	Correspondence
2	82/07/19	Acknowledging receipt of copies of shipping documents and further advice on records search	DDSmith - UCC	CFox - USEPA	Correspondence
2	82/07/21	Conrail submittal of documents and request for confidentiality	TPPendergast - Conrail	JMcPhee & CFox - USEPA	Correspondence
1	82/07/22	Record of phone conversation between USEPA and Conrail			Communication Record
1	82/07/22	Atec follow-up response to Request for Information	GTWeaver - Atec Inc.	CLFox - USEPA	Correspondence
2	82/07/22	Letter advising USEPA that author represents Litton Great Lakes Corp. [redacted]. in this case.	John J. O'Keefe, Jr. - Litton Inc.	Catherine Fox - USEPA	Correspondence
5	82/07/22	[redacted] Lake Steamship Co. [redacted] Oil Matter re: Laskin Oil co.	TJManthey - Pickands Mather		Other
2	82/07/23	Objections of Copperweld	LBGriffith - Atty for Copperweld	MPerry - USEPA	Correspondence
1	82/07/26	Response to USEPA detailing quantity and types of waste oil.	R.Gentile-Pittsburgh&Conneaut Dock.	S.Leifer-USEPA	Correspondence
20	82/07/28	HRS Report	EJJurcyak - USEPA		Other

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
2	82/07/29	Contention of Pittsburgh & Lake Erie RR that it is not a Potentially Responsible Party.	R.[illegible]-Pittsburgh&Lake Erie RR	Steven [illegible] - USEPA	Correspondence
2	82/07/3[illegible]	TRW Notice to USEPA that no emergency removal action is necessary, and all removal action should be halted until completion of examination of alternatives	W[illegible]Phillips - TRW	[illegible] & [illegible] - USEPA	Correspondence
9	82/07/30	Enclosing copies of all TRW documents relating to the Laskin OOS.	W[illegible]Phillips - TRW	CFox - USEPA	Correspondence
1	82/[illegible]	Release of documents and information by USEPA	CLFox - USEPA	Griffith - Atty for Copperweld Corp.	Correspondence
3	82/[illegible]	Arrangement setting forth agreement regarding the exchange of documents between USEPA and SFI	[illegible] - Atty for SFI	[illegible] & CFox - USEPA	Correspondence
4	82/[illegible]	Response to USEPA allegation that Kaiser-Erie is among the parties who are responsible for hazardous wastes.	James Glenn-Kaiser Aluminum	Catherine Fox-USEPA	Correspondence
1	82/08/04	Renewal of Request for documents indicating Copperweld liability	LBGriffith - Atty for Copperweld	JTMcPhee - USEPA	Correspondence
1	82/08/05	[redacted]versation with Ron [redacted] Rockwell re: [redacted]s and meeting date.	Catherine Fox - USEPA		Communication Record
1	82/08/09	Record of telcon between Pickands Mather and USEPA			Communication Record
1	82/08/03	Record of telcon between Interlake and USEPA re conversation with Biros			Communication record
1	82/08/16	Notes of telcon between CFox and SBair re Laskin Waste Oil Service			Communication Record

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	1	82/08/16	Enclosing documents showing BFI's involvement at the site	DLFox - USEPA	WWFalsgraf - Atty for BFI	Correspondence
	1	82/08/17	Record of telcon between General Refractories and USEPA			Communication Record
	1	82/08/20	Record of telcon between Pickands Mather and USEPA re meeting			Communication Record
	4	82/08/24	Final Analyses Results from Samplings Surveys 5/21/81 and 6/24/81	DJMurray - USEPA	APutter - USEPA	Memorandum
	6	82/08/26	Formal response to information request contained in letter dated 6/13/82 and UCC request that all claims against it be withdrawn	CCGolon - UCC	CFox - USEPA	Correspondence
	31	82/08/27	Enclosing copies of photographs from report on Laskin Oil	TJMahoney - Pickands Mather	DLFox - USEPA	Correspondence
	14	82/09/17	Site Inspection			Report Studies
	6	82/09/02	Document Exchange with Cooes-Vulcan	KCMoore - Atty for Copes	JMcGhee - USEPA	Correspondence
	1	82/09/10	Comments on BNA article	TJMahoney - Pickands Mather	FBlanc - USEPA	Correspondence
	3	82/09/10	Cover letter to and [redacted] Brown & Machine Co. [redacted] documents.	K.Moore-Squires, Sanders & Deecsey	Jonathon McGhee - USEPA	Correspondence
	1	82/09/14	[redacted] of chemical composition of liquids	WWFalsgraf - Atty for BFI	DLFox - USEPA	Correspondence
	1	82/09/15	Koppers Interoffice Corr. reviewing Bergunder's files to determine the quantities of waste oil which may have been disposed at Laskin.	J.M.Dern - Koppers Co.	T.Bergunder - Koppers Co.	Memorandum

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	2	82/09/21	Request that Rockwell be deleted from the list of PRPs	Ronald Leslie - Rockwell	J. McPhee - USEPA	Correspondence
	1	82/09/22	Letter advising General Motors that author represents the interests of the Litton entities in the Laskin case.	John J. O'Keefe, Jr. - Litton Ind.	L.Charla - General Motors	Correspondence
	4	82/09/24	Locating individual officers of certain PRPs	JFJanchura - Conrail	JMcPhee & CFox - USEPA	Correspondence
	1	82/10/05	Phone conversation with Andrew McLandrich, atty. for Ohio Brass & Machine Co. detailing some differences between Laskin invoices and their own.	Catherine Fox - USEPA		Communication Record
	2	82/10/06	Confirmation of phone conversation on 10/5/82 where McLandrich addressed charges made on the Laskin invoices and where he differs with the USEPA about total gallon amounts.	McLandrich-Weston,Hurd,Fallon,et al	Catherine Fox - USEPA	Correspondence
	1	82/10/07	Record of telcon between Interlake and USEPA re exempting Interlake as PRP			Communication Record
	2	82/10/07	Request to eliminate Interlake as a PRP	TJManthey - Pickands Mather	JMcPhee - USEPA	Correspondence
	100	82/10/15	Enclosing various health and safety sheets on [redacted] products	ENLacy - Mobil	CSeidel - General Elect	Correspondence
	1	82/11/17	[redacted]ing documents requested by USEPA	SRead - General Electric	CFox - USEPA	Correspondence
	5	82/12/12	Attaching Summary of Analysis and Conclusions USEPA and State of Ohio v. Laskin Waste Oil Co.	JMBruck - Peco	TJManthey - Pickands Mthr	Correspondence
	2	82/12/22	Confirming scheduled meeting	TJManthey - Pickands Mather	JMcPhee - USEPA	Correspondence
	4	82/12/22	Preliminary Assessment	KGKrueger - Ecology & Environment	USEPA	Reports/Studies

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PGS	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	130	83/12/29	Statement of Non-Applicability Pursuant to the Petroleum Exemption under CERCLA	Conrail		Other
	22	83/01/04	Summary of Peer Review Activities re Laskin			Other
	2	83/01/12	Additional information re: waste oil constitution.	Clay Mack - atty. for Perfection	Catherine Fox - USEPA	Correspondence
	3	83/01/19	Request to remove Pickards Mather from PRP list	TJMcKinney - Pickards Mather	JTMcKee - USEPA	Correspondence
	1	83/02/25	Reiteration of requests for EPA to concur with Statement of Non-Applicability under petroleum exemption to CERCLA and for acknowledgement	JRLawrence - Conrail	CFox & JMcKee - USEPA	Correspondence
	2	83/03/09	Update on response actions performed by the USEPA.	B.Constantelos - USEPA	R.Leslie - Rockwell	Correspondence
	2	83/03/09	Notice letter to first tier PRPs and Request for cleanup	BGConstantelos - USEPA	WPhillips - TRW	Correspondence
	2	83/03/09	USEPA invitation to conduct response and remedial actions.	Basil Constantelos - USEPA	N.Bernstein-Perfection Co	Correspondence
	4	83/03/18	FOIA Request	CDSmith - UCC	BGConstantelos - USEPA	Correspondence
	1	83/03/19	BFI Response to Notice Letter	MWFalsgraf - Atty for BFI	BGConstantelos - USEPA	Correspondence
	4	83/03/21	[redacted]nt from first tier [redacted] 3/9/83 letter [redacted]EPA	KCMoore - Atty for Copes	BGConstantelis - USEPA	Correspondence
	1	83/03/22	Response to Notice Letter	JWPowers - Atty for Commercial Shrg	BGConstantelos - USEPA	Correspondence
	1	83/03/29	Record of telcon between USEPA and Pickards Mather re response to notice letter			Communication Record
	2	83/03/30	Request for Information	MLGreenberg - Eagle Picher	BGConstantelos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	2	80/03/31	Request for response	JRJanchura - Conrail	BGConstantelos - USEPA	Correspondence
	117	80/04/16	Remedial Action Master Plan - RAMP	CH2M Hill and Ecology & Environment	USEPA	Reports/Studies
	1	80/04/17	TSP Response to EPA notice letter and TSP Request for Information	EDMoore - TSP	BGConstantelos - USEPA	Correspondence
	2	80/04/18	Offer by Ohio Broach & Machine Co. to settle with the USEPA their financial liability.	Andrew McLandrich-Weston,Hurd,et al	Jonathan McPhee-USEPA	Correspondence
	1	80/05/13	Request for meeting	SRead - General Electric	JMcPhee - USEPA	Correspondence
	5	80/05/13	Recap of 5/9 80 letter and request for clarifications	LETosi - Atty for GM	BGConstantelos - USEPA	Correspondence
	1	80/06/16	Request for meeting	SRead - General Electric	JMcPhee - USEPA	Correspondence
	3	80/06/19	Handwritten note re Conrail as a hazardous waste generator			Handwritten Notes
	1	80/07/30	NPL Site Summary	USEPA		Other
	1	80/07/31	GM prepared to provide EPA with all shipping documents in its possession	LETosi - Atty for GM	BGConstantelos - USEPA	Correspondence
	4	80/07/28	Comments and suggestions on May 1980 letter from USEPA	KCMoore - Atty for Copes	BGConstantelos - USEPA	Correspondence
	66	80/07/29	[redacted] Plan Field Investigation [redacted] bility Study	CH2M Hill and Ecology & Environment	USEPA	Reports/Studies
	2	80/08/09	Notice of a possibly solvent successor to Standard Transformer.	KMoore-Squire,Sanders et al	BConstantelos-USEPA	Correspondence
	1	80/08/12	Confirming meeting and agenda	SRead - General Electric	JMcPhee - USEPA	Correspondence
	2	80/08/17	Request for USEPA to recognize Copes not PRP	KCMoore - Atty for Copes	BGContantelos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	2	83/10/00	USEPA response to 9/2/83 letter Draft	BGConstantelos - USEPA	LETosi - Atty for SM	Correspondence
	4	83/10/03	Offer to exchange documents	LETosi - Atty for SM	BGConstantelos - USEPA	Correspondence
	1	83/09/15	Confirmation of no PCBs in TRIM Sol	MLmoff - Master Chemical Corp.	DWhitman - Copes	Correspondence
	1	83/09/19	Notes of meeting re sampling			Meeting Notes
	1	83/09/29	TRIM SOL not hazardous waste under RCRA	MJGanning - Master Chemical Corp.	DWhitman - Copes	Correspondence
	5	83/09/30	Gulfcut 41B does not contain PCBs	JFDey - Gulf	DWhitman - Copes	Correspondence
	1	84/01/12	Request to refrain from action until further discussions	DGHaynam - Atty for SM	DAUllrich - USEPA	Correspondence
	2	84/01/17	Conrail Response to Request for Information	JRJenchura - Conrail	JMcPhee - USEPA	Correspondence
	2	84/02/22	Detail of successor relationship of Schlumberger Ltd. to Standard Transformer.	Jordan Thompson-Schlumberger Ltd.	J.McPhee - USEPA	Correspondence
	5	84/03/22	Additional information showing that Copes waste oil was not hazardous under Superfund act	KCMoore - Atty for Copes	BGConstantelos - USEPA	Correspondence
	39	84/04/30	[illegible] Remedial [illegible] Feasibility [illegible] Liquid Removal	CH2M Hill and Ecology & Environment	USEPA	Reports/Studies
	7	84/05/23	Request for answer to April 1984 letter and affirmation of willingness to continue negotiations	KCMoore - Atty for Copes	BGConstantelos - USEPA	Correspondence
	5	84/06/25	Renewal of Copes Request that EPA recognize that it is not a PRP	KCMoore - Atty for Copes	BGConstantelos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
2	84/07/09	Health issues related to TCDD	[illegible] - DHHS	RTDewling - USEPA	Correspondence
1	84/09/25	Mercer Forge's request to the USEPA that their Response to the Agency's Information request be treated as Confidential Business Information.	Tom McPhee - USEPA	Ruth Mancus - USEPA	Memorandum
42	84/10/02	Final Work Plan Feasibility Study	CH2M Hill and Ecology & Environment	USEPA	Reports/Studies
37	84/10/09	GM Response to USEPA Information Request	GM		Correspondence
2	84/11/17	GM Response to Information Request by USEPA	DGHaiman - Atty for GM	JTMcPhee - USEPA	Correspondence
2	84/11/05	Note and attachment re withdrawal of GM referral	RMGrimes - USEPA	JTMcPhee - USEPA	Memorandum
5	85/03/29	Testing oil for dioxins and related compounds	JRCampbell - Koppers Co.	DHopkins - USEPA	Correspondence
3	85/04/00	Listing of substances identified at site			Other
64	85/05/31	Affidavit of James M. Harris	JMHarris - R-P&C Valve (Div of WCI)		Other
169	85/08/00	Dioxin Data Report	Brehm Labs	USEPA	Sampling Data
3	85/08/23	Dioxin testing results and approval of work plan	DHopkins - USEPA	JRCampbell - Koppers Co.	Correspondence
25	86/04/00	[illegible]alysis for the [illegible] Poplar Site	Weston-Sper	USEPA	Reports/Studies
3	86/06/12	[illegible]emental Affidavit of James L. Calhoun	JLCalhoun - White Consltd Ind (WCI)		Other
33	86/08/29	Record of Decision (ROD)	USEPA		Memorandum
9	86/09/16	Amended Administrative Order	USEPA		Pleadings/Orders
34	86/11/00	Soils Sampling Plan	Engineering Science	USEPA	Reports/Studies

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
1E		86/11/10	Sampling Plan for Pits and Tanks	Engineering Science	USEPA	Reports/Studies
4		86/11/12	Locke Machine Company's Affidavit Pursuant To Laskin/Poplar Joint Defense Agreement	David Lamden - Locke Machine Co.		Correspondence
6		87/01/29	Remedial Action Sampling Activities	Metcalf & Eddy	USEPA	Reports/Studies
100		87/03/00	Results of Soils Sampling - Volume 2	Engineering-Science	USEPA	Reports/Studies
152		87/03/00	Remedial Action Work Plan for Tank and Pit wastes - Volume I	Engineering-Science	USEPA	Reports/Studies
1		87/07/16	Identification of Federal ARARs	Grubba - USEPA	USEPA - Various	Memoranda
1		87/07/17	Request for State ARARs	WAdamkus - USEPA	SUPerfund - OEPA	Correspondence
1		87/07/15	Record of conversation with J.Lemsser re Landfarming	RDagnall - USEPA		Communication Record
1		87/07/22	Record of telcon with D.Petroswy re PCB Regulations	RDagnall - USEPA		Communication Record
1		87/08/05	Record of telcon with L.Fabinski re PAHs in soils	RDagnall - USEPA		Communication Record
12		87/08/07	Operable Unit Draft ROD	DMSpencer - USEPA	RDagnall - USEPA	Memoranda
83		87/08/07	[redacted] Feasibility Study [redacted] Source Material [redacted] Laskin/Poplar Site	USEPA		Reports/Studies
150		87/08/10	Final Work Plan Phase 2 RI	CH2M Hill	USEPA	Reports/Studies
5		87/08/12	Summary of State ARARs	KBonds - OEPA	RDagnall - USEPA	Correspondence
124		87/08/26	Transcript of public hearing held at the	USEPA		Meeting Notes

ADMINISTRATIVE RECORD INDEX
Lasko/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
			Ashtabula County Courthouse, Jefferson, Ohio on 8/25/87			
	2	87/08/18	Request for extension of time to submit comments on the PFS	Gallagher - Atty for Union Carbide	JMcPhee - USEPA	Correspondence
	2	87/09/00	TRW Response to Request for Information and FOIA Request	Wehrmeier - Atty for TRW	RMarcos - USEPA	Correspondence
	1	87/09/09	Response to USEPA Information Request .	Paul Buemlein-Standard Transformer	USEPA	Correspondence
	2	87/09/11	Legal questions to the USEPA in response to 8/18/87 letter.	R.Kruis for National Forge	J.McPhee - USEPA	Correspondence
	4	87/09/11	Response of National Forge Company to 8/18/87 USEPA Information Request along with the Affidavit of Larry V. Friend for National Forge Company.	Ronald Kuis for National Forge	Ruth Marcos - USEPA	Correspondence
	1	87/09/14	Record of telcon with Clincsay and TBarriball re Cleanup Levels	RDagnall - USEPA		Communication Record
	1	87/09/16	Record of telcon with RTraver re Soil Washing	RDagnall - USEPA		Communication Record
	2	87/09/16	Record of telcon with Cuehling re Petroleum Exclusion	RDagnall - USEPA		Communication Record
	3	87/09/16	[redacted] to USEPA for information of 8/18/87.	Billie Nolan - Koppers Co.	Ruth Marcos - USEPA	Correspondence
	65	87/09/16	Commercial Shearing Response to Request for Information	JGWritz - Commercial Shearing	RMarcos - USEPA	Correspondence
	3	87/09/17	Invitation to review data and files	Maggone-Atty for Various Dfnts	RMarcos - USEPA	Correspondence
	4	87/09/17	Response to Notice Letter and Invitation to Inspect documents	Maggone-Atty for Various Dfnts	RMarcos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	38	87/09/18	Response to USEPA Information Request of 8.18.87 with Exhibits A and B	M. Ann Bradley-Attny. for Kaiser	Ruth Mancos - USEPA	Correspondence
	1	87/09/21	Record of telecon with BSypniewski re Land Disposal Regulations	BSypniewski - USEPA		Communication Record
	1	87/09/22	Union Carbide Response to Request for Information	wBoughton - Atty for Union Carbide	RMancos - USEPA	Correspondence
	3	87/09/22	Response of Rockwell International to the 8/18/87 Information Request	David Nash - Rockwell	Ruth Mancos - USEPA	Correspondence
	4	87/09/22	Pertinent facts to Laskin/ Poplar as it relates to Locke Machine Co.	David Lorcher - Locke Machine Co.	Ruth Mancos - USEPA	Correspondence
	5	87/09/22	BFI Response to Notice Letter	DLindlar - BFI	RMancos - USEPA	Correspondence
	45	87/09/22	Response to USEPA corres. dated 8/18/87 with enclosure documents	Ralph Biggs - Litton Great Lakes	B.Constantelos - USEPA	Correspondence
	3	87/09/23	Matlack, Inc. reponse to USEPA Information Request.	K.Kowalski-Squires,Sanders&Dempsey	Ruth Mancos-USEPA	Correspondence
	4	87/09/23	Conrail Response to Request for Information	KMKowalski - Atty for Conrail	RMancos - USEPA	Correspondence
	4	87/09/23	WCI Response to Request for Information about Poplar Laskin Oil Site	KMKowalski - Atty for WCI	RMancos - USEPA	Correspondence
	5	87/09/23	Anchor Motor Freight's Response to Request for Information	KMKowalski - Atty for Anchor Motor	RMancos - USEPA	Correspondence
	32	87/09/23	Response to Information Request By Pittsburgh & Conneaut Dock Co.	J.Klein-Reed,Smith, et al.	Ruth Mancos - USEPA	Correspondence
	2	87/09/24	Response to 8/25/87 USEPA Information request.	David Jacobsin - Perfection Corp.	Ruth Mancos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
5	87/09/24	Cochran Response to Request for Information	CPMullen - Atty for Cochran	RMarcos - USEPA	Correspondence
1	87/09/25	General Motors response to information request and request for confidentiality	RMarcos - USEPA	JMcPhee - USEPA	Memorandum
2	87/09/25	Matlack, Inc. inadvertently omitted Affidavit to the response to Request for Information submitted on 9/22/87.	J.Carlisle Peet, III-Matlack,Inc.	Ruth Marcos-USEPA	Correspondence
94	87/09/25	Interlake Steamship response to inquiries made in letter dated 8/18/87	TJMartney - Pickands Mather	RMarcos - USEPA	Correspondence
2	87/09/29	Record of telcon with BShaw re Land Disposal Restriction	RBagnall - USEPA		Communication Record
1	87/09/30	Letter from Matlack counsel reflecting disappointment in the USEPA listing of waste amounts on a 'mere' volumetric basis.	KKowalski - Atty for Matlack	Thomas Baribal-USEPA	Correspondence
1	87/09/30	Complaint of EPA's listing of volume only and not types of substances sent	KMKowalski - Atty for Anchor Motor	TBaribal - USEPA	Correspondence
1	87/09/30	Complaint regarding volume only listing of wastes	KMKowalski - Atty for Conrail	TBaribal - USEPA	Correspondence
1	87/09/30	Request to delete double listing of WCI on PRP volume listing and complaint about mere volume listing instead of type of material	KMKowalski - Atty for WCI	TBaribal - USEPA	Correspondence
4	87/09/30	K-Mart Response to Request for Information	FAStallworth - K-Mart	RMarcos - USEPA	Correspondence
44	87/09/30	Record of Decision (ROD)	USEPA		Memorandum
1	87/10/06	Chevron Response to	DEVineyard - Chevron	RMarcos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX
Laskin/Poplar Oil
Ashtabula, Ohio

INDEX PAGES DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
	Request for Information			
3 87/10/05	UNOCAL Response to Request for Information	WADris - UNOCAL	RMancos - USEPA	Correspondence
11 87/[illegible]	American Cyanamid Response to Request for Information	RGianni - American Cyanamid	BBConstantelos - USEPA	Correspondence
4 87/[illegible]	Response of D & P Oil & Gas to the USEPA's Information Request.	W.Scully-Kellen,Scully & Williams	Ruth Mancos - USEPA	Correspondence
24 87/[illegible]	Response to USEPA 8/13/87 Information Request	R.Johnson-Pitt. & Lake Erie RR	Ruth Mancos - USEPA	Correspondence
25 87/[illegible]	Copperweld Response to Request for Information	JWuttinger? - Atty for Copperweld	RMancos - USEPA	Correspondence
3 87/[illegible]/18	UNOCAL Followup Response to Request for Information	WADris - UNOCAL	RMancos - USEPA	Correspondence
6 87/[illegible]/18	Cochran Response to Request for Information	CFMuller - Atty for Cochran	RMancos - USEPA	Correspondence

ADMINISTRATIVE RECORD INDEX UPDATE
LASKIN/POPLAR OIL COMPANY SITE
ASHTABULA COUNTY, OHIO

IMG FRAME PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
33	[illegible]	Special Notice Letter	Norman Niedergang-USEPA	See service list	Correspondence	
[illegible]	[illegible]	Comment on the FS.	Lynn Clark-Leaseway Transportation	Gina Weber-USEPA	Correspondence	
26	[illegible]	Comments on the Proposed Plan of the Counsel for Perfection Corp	Scroll-Freedman, Levy, Frolich & Kuss	Gina Weber-USEPA	Correspondence	
[illegible]	[illegible]	Comments on the FS by the Counsel for the Laskin Task Force.	Douglas Haynam-Fuller & Henry	Gina Weber-USEPA	Correspondence	
[illegible]	[illegible]	Comments on the FS and the Proposed Plan.	Schaler & Beals-OEPA	Gina Weber-USEPA	Correspondence	
[illegible]	[illegible]	Comment on the FS.	Vern H. Hall	Gina Weber-USEPA	Correspondence	
[illegible]	[illegible]	Comment on the FS.	C.McElwee-Squires, Sanders & Dempsey	Gina Weber-USEPA	Correspondence	
4	[illegible]	Fact Sheet: "Remedial Investigation Completed at the Laskin Poplar Oil Site".	USEPA		Fact Sheet	
5	[illegible]	Fact Sheet: "Feasibility Study Completed for the Laskin Poplar Oil Site, Jefferson, Ohio."	USEPA		Fact Sheet	
11	8[illegible]/07/08	Health Assessment.	ATSDR-Dept. of Health & Human Ser.	Louise Fabinski-USEPA	Reports/Studies	
369	89/04/07	Public Comment Edition Feasibility Study.	CH2M Hill	USEPA	Reports/Studies	
20	89/04/12	Proposed Plan Laskin Poplar Oil Site Jefferson, Ohio.	USEPA		Reports/Studies	
42	89/04/26	Transcript of Public Hearing.	USEPA		Transcript	

ADMINISTRATIVE RECORD INDEX UPDATE
LASKIN POPLAR OIL COMPANY SITE
ASHTABULA COUNTY, OHIO

FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	[illegible]
	144	88/08/0[illegible]	Final Work Plan For Conducting Remedial Design Of The Source Removal Operable Unit	Engineering-Science		Reports/Studies	
	[illegible]	89/10/03	Remedial Investigation Report Vol. One of Three	CH2M Hill	USEPA	Reports/Studies	[illegible]
	253	89/10/03	Remedial Investigation Report Vol. Two of Three	CH2M Hill	USEPA	Reports/Studies	[illegible]
	[illegible]	89/10/03	Remedial Investigation Report Volume Three of Three	CH2M Hill	USEPA	Reports/Studies	[illegible]

RESPONSIVENESS SUMMARY

LASKIN POPLAR OIL SITE
Jefferson, Ohio

U.S. EPA

June 16, 1989

RESPONSIVENESS SUMMARY
LASKIN POPLAR OIL SITE, JEFFERSON, OHIO

INTRODUCTION

The U.S. Environmental Protection Agency (U.S. EPA) has gathered information on the types and extent of contamination, evaluated remedial measures, and recommended remedial actions at the Laskin Poplar Oil site. Several public meetings were held to explain the intent of the project, describe the results, and receive comments from the public. Public participation in Superfund projects is required in the National Oil and Hazardous Substances Contingency Plan (NCP). Comments received from the public are considered in the selection of the remedial action for the site. This document summarizes the comments received regarding the proposed final remedy and describes how they were incorporated into the decisionmaking process.

The community relations responsiveness summary has five sections:

- Overview discusses U.S. EPA's recommended alternative for remedy of exposure to contaminated material at the Laskin Poplar Oil site.

- Background on Community Involvement and Concerns provides a brief history of community interest and concerns raised during remedial planning activities at the site.

- Public Comments Received during Public Comment Period summarizes both oral and written comments received from the community and U.S. EPA's responses grouped by the following topics: general comments, recommended alternative comments, and incinerator comments.

- Potential Responsible Party Comments summarizes comments received from the PRPs and U.S. EPA's responses.

- Ohio EPA Comments and U.S. EPA Responses summarizes comments received from Ohio EPA and U.S. EPA's responses.

In addition, Attachment A identifies the community relations activities conducted by U.S. EPA during the remedial response activities at the site. Attachment B is the revised Figure 4-8 from the Feasibility Study report. Attachment C is a letter from U.S. EPA to Ohio EPA explaining its rationale for selecting Alternative 3A.

The detailed transcript of the Feasibility Study public meeting and the written comments are not included, but they are available for public inspection from U.S. EPA, Region V, in Chicago. Copies are also available in the Administrative Record at the following repositories:

Ashtabula County Disasters Services Offices
Ashtabula County Court House
25 West Jefferson Street
Jefferson, Ohio 44047
216/997-9341

Ashtabula County District Library
335 West 44th Street
Ashtabula, Ohio 44004
216/576-9148

OVERVIEW

During the public comment period, the U.S. EPA presented eight alternatives to remediate the potential for exposure to contaminated groundwater and soil at the Laskin Poplar Oil site and also a no-action alternative. The EPA recommended capping the contaminated soil and installing a groundwater diversion trench around the contaminated soil. The cap and the trench would prevent water from filtering through the contaminated soil. All dioxin-contaminated materials amenable to thermal treatment would be incinerated; the rest would be disposed of beneath the cap in a concrete vault.

The public comments received were generally supportive of EPA's recommendation. Most of the comments received at the public hearing pertained to operation of the incinerator. Some concern was expressed about the ability of the incinerator to safely and effectively destroy material contaminated with PCBs and dioxin. Most of the discussion about the incinerator, however, concerned the monitoring of stack emissions and reporting the test results to the interested public.

BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

Community involvement in this project began in 1974 when residents living near the site began complaining to the site owner and local officials about bad odors resulting from the firing of the boilers and from the onsite ponds and pits. In July 1978, concerned citizens submitted a complaint to Ohio EPA requesting that operations at the site cease. From 1978 to 1980, residents sought to stop the oil recycling activities of the Laskin Poplar Oil Company and became involved in several local court cases. In 1980, local residents formed a citizens' group called the Committee for Clean Environment. The purpose of the group was to monitor events at the site and to work for quick remediation by local and state governments of site-related problems. Their efforts succeeded in 1981 when the Ashtabula County Court of Common Pleas issued a court order banning oil recycling activities by the Laskin Poplar Oil Company.

In 1983, the U.S. EPA placed the site on the National Priorities List (NPL). Local residents attended a public hearing that described the remedial investigation (RI) process, and they and officials contributed to the formulation of the community relations plan (CRP). In August 1987, area residents attended an availability session to discuss onsite progress with U.S. EPA staff. Later that month, area residents attended a public meeting to comment on the feasibility study for the source material removal operable unit. In March 1989 a number of residents and local officials were contacted to update the CRP. In April 1989, residents attended a public meeting concerning U.S. EPA's recommended remedial action.

Citizen interest and involvement has been mobilized largely through the efforts of a few individuals, particularly Mr. Vern Hall. Mr. Hall, a Jefferson Township Trustee, acts as a key contact for exchange of information on the site in the Jefferson community.

Throughout the RI/FS process, the public expressed these concerns:

- Health issues related to the pathways of possible exposure to contaminants during the period of Laskin's operation. These include exposure to the burning of PCB contaminated oil and exposure to dioxin.

- Health issues related to potential exposure to contaminants associated with the site.

- The amount of time U.S. EPA has spent conducting the RI/FS. Residents have expressed frustration over the length of time the RI/FS has taken to complete. The community has been concerned about the site since the late 1970s and some residents wonder why remediation has not been expedited.

- The frequency of information distributed to the community. Receiving accurate information about the EPA's activities at the site is a major concern of local residents. Residents have found the fact sheets and availability sessions are a good technique for providing information to the community. Residents have expressed a strong interest in the proposed incinerator. Some residents have suggested that a fact sheet describing the operation and monitoring procedures for the incinerator should be distributed to the community.

- The operation of the incinerator, including incinerator byproducts, length of operation, and frequency of emission tests.

- Use of local contractors during remedial action. A state government official indicated that local contractors should be used as much as possible in the remedial action work. It was felt that the use of local contractors was important to all county residents.

PUBLIC COMMENTS RECEIVED DURING PUBLIC COMMENT PERIOD AND U.S. EPA RESPONSES

This responsiveness summary addresses both oral and written comments received by the U.S. EPA concerning the RI/FS for the Laskin Poplar Oil site. The comment period was held from April 12 to May 12, 1989. A public meeting was held on April 26 at the Ashtabula County Courthouse to allow the public to present oral and written comments.

GENERAL COMMENTS

1. Mr. Gordon Housel had questions regarding the effect of the cleanup on the summer fair. His questions pertained to:

   - The ability of people to park on Laskin's property during the fair
   - The starting date for onsite cleanup activities
   - The level of activity during Fair Week and the rest of the summer

   U.S. EPA's Response: No incineration will take place this summer. If demolition work occurs this summer, the community relations coordinator (CRC) for the site will work closely with fair officials to minimize any adverse effects on the fair. U.S. EPA has no authority to prohibit vehicles from parking on the southeast corner of the Laskin property during the fair unless parking interferes with the remedial work.

2. Ms. Margaret Schossler and Mr. Ray Sapporito had questions regarding a cancer study done in the area. They asked:

   - For a clarification between a risk assessment and a cancer study
   - When the study was conducted
   - The scope of the study

   U.S. EPA's Response: As part of the RI/FS process, two different assessments were performed to determine the impacts of the onsite contaminants on the community. The first assessment, a risk assessment, was performed by consultants during the RI to evaluate the potential for adverse effects to public health or the environment if no remedial action were taken beyond the scheduled pit, tank, and soil removal (Source Removal Operable Unit remedial action). The risk assessment identified ways that people or wildlife could be exposed to contaminants from the site and evaluated potential exposure settings for existing and possible future site uses. Under existing site conditions, exposure may occur if people have direct contact with exposed contaminants in the surface soil, surface water, sediments, and structures on the site. Risks were also evaluated for the future site use setting of residential development of the site. Exposures that may be of concern if such development occurs include exposure of construction workers to contaminated subsurface materials, and exposure of future residents to contaminants present in the shallow groundwater if it is used as a water supply. Exposure to contaminants was evaluated for both carcinogenic and noncarcinogenic health effects. The risks from onsite exposure and future site use are summarized in Table 1-2 of the FS report.

The second assessment performed was a health assessment. The health assessment was performed by the Agency for Toxic Substances and Disease Registry (ASTDR). A health assessment examines a population's level of exposure to contaminants through environmental and human exposure pathways; i.e., ingestion of groundwater, surface water, and soil. The data used by ASTDR in their health assessment were taken from the RI conducted in 1986. Unlike a risk assessment, a health assessment does not consider future uses of the site in determining the effects of the contaminants on a population's health. The health assessment is concerned only with a population's historic exposure to onsite contaminants through exposure pathways. If the health assessment reveals that a population has been exposed to the onsite contaminants through environmental and human exposure pathways, a health study is usually done. During the health study, the local population undergoes a number of medical tests to determine the possible effects of the contaminants on their health. A cancer study is one possible study within a health study. Because local residents have not been exposed to the contaminants on the Laskin site through such exposure pathways as groundwater, surface water, and ingesting soil, the ASTDR determined there was no need to conduct a health study. A copy of ASTDR's health assessment is located in local repositories.

3. **Mr. Alvin Laskin indicated that the PRPs are not going to pay for the cleanup. He stated that they will add the cleanup cost to the cost of their products and the public will pay the price.**

U.S. EPA's Response: PRPs may raise the cost of their products to pay for the cost of the remedial action; however, U.S. EPA has no way of knowing whether that will happen. U.S. EPA's responsibility under CERCLA is to identify the PRPs and obtain compensation from them to pay for

the necessary remedial action. U.S. EPA has no control over the source of funds PRPs use to pay for remedial action work.

4. Mr. Gene Trhlin inquired whether U.S. EPA has sufficient funding to police the PRPs and enforce its proposed alternative.

   U.S. EPA's Response: Under the Superfund Amendments and Reauthorization Act (SARA), U.S. EPA can obtain oversight costs from the PRPs. If a negotiated settlement with the PRPs fails, U.S. EPA can proceed with the remedial action and use the courts to recover the remedial action costs from the PRPs; or it can seek administrative or judicial orders requiring the PRPs to perform the remedy. During the course of the PRP remedial design and action, U.S. EPA will do whatever is necessary to monitor and verify the progress of the PRPs' remedial actions. Funding and contractor assistance are available for oversight, and the state of Ohio may also be active in this area.

5. Mr. Gene Trhlin also asked whether the EPA representatives knew of any action being taken to prevent oil spills such as the one in Alaska.

   U.S. EPA's Response: The U.S. EPA does not wish to respond to comments on the Alaskan oil spill since it is not related to the Laskin Poplar Oil cleanup.

6. Ms. Margaret Schossler expressed a concern that, with big contracts such as this one, the activities that are promised to be done are never done.

   U.S. EPA's Response: The recommendations made in the ROD and other pertinent documents will be followed in completing the remedial work onsite. During the course of the remedial action there may be minor modifications to the recommended

activities, but the character of the cleanup cannot change substantially without giving the public an opportunity to comment on the changes. The schedules of activities for this project are available to the public at the local repositories. If anyone feels that the cleanup is not proceeding according to the plan, the CRC or the RPM should be contacted to resolve the problem.

7. Mr. Alvin Laskin stated that he videotaped a 250,000-gallon discharge of oil into Cemetery Creek from a dike that had been weakened from digging done by U.S. EPA.

   U.S. EPA's Response: In the process of working on the dike, there was a discharge of oil into Cemetery Creek. The action is viewed as a spill, not an intentional discharge.

8. Mr. Alvin Laskin stated that the EPA has approved the burning of oil containing up to 50 parts per million of PCBs by a greenhouse in Massachusetts.

   U.S. EPA's Response: The Massachusetts oil site is a completely different situation. The Massachusetts greenhouse is burning PCB-contaminated oil at a temperature that destroys the PCBs. Laskin's boilers operated at considerably lower temperatures, and sampling indicates that he burned oil with much higher levels of PCBs.

9. Leaseway Transportation Corporation stated that Alternative 6, the state's recommended remedial action, will yield no enhanced protection and could cost more than four times that of Alternative 3A, the recommended remedial action, and take twice as long to complete. Leaseway further stated that because of the time required to complete Alternative 6, local residents and the environment may actually be exposed to more hazardous constituents than under Alternative 3A.

U.S. EPA's Response: Alternative 6 would eliminate the need for long-term management of the site. However, it as well as Alternative 3A would provide adequate protection of human health and the environment. Because of the cost of Alternative 6 and the potential adverse impacts on the community over its 4-year implementation period, it has been judged by U.S. EPA to be less desirable than Alternative 3A.

COMMENTS ON THE RECOMMENDED ALTERNATIVE

1. Mr. Charles Long expressed his support for the recommended alternative. He asked whether the freshwater pond and retention pond would be drained and filled and where the dirt to fill the pond would be found.

   U.S. EPA's Response: Under the recommended alternative, both the freshwater pond and the retention pond will be drained and filled. Some of the soil used to fill the ponds may be found onsite. In the event that onsite soil is incapable of filling both ponds, clean fill will be imported.

2. Mr. Gene Trhlin asked about the depth of the groundwater diversion trench, its purpose, and the purpose of the cap.

   U.S. EPA's Response: The groundwater diversion trench will be 25 to 40 feet deep and will prevent groundwater that is flowing north to Cemetery Creek from flowing into the site and coming into contact with the contaminated soil. The proposed multilayered cap will cover approximately 3.5 acres and will virtually prevent water (rain, snowmelt) from filtering through to the contaminated soil beneath the cap.

3. Mr. Alvin Laskin said it appeared that the groundwater diversion trench would destroy the front of his house.

U.S. EPA's Response: The construction of the underground trench proposed under the plan should not disturb Mr. Laskin's house.

4. Mr. Gene Trhlin had questions regarding the cost of the remedial alternative. His questions pertained to:

   - The method used to determine the cost
   - Cleanup activities included in the cost
   - The method used to award contracts for remedial action

   U.S. EPA's Response: The estimated cost of this project is based largely on existing contracts from other Superfund sites. The cost of this project includes the total range of construction activities required to complete the remedial action, and the cost estimates were made based on the assumption that U.S. EPA would perform the remedial action at the site. The incinerator is a large part of the cost. Also included in the cost are activities such as earthmoving and well drilling and material costs for items such as the fill and synthetic material in the cap. As a U.S. EPA project, any remedial action contracts associated with this project will be let to the lowest responsive and responsible bidder. If the PRPs perform the remedial action they are not required to award the contracts to the lowest bidder; however, they may choose to do so.

5. Ms. Martha Demshar expressed concern about children gaining access to the site and asked what type of fencing would be used onsite and the extent of the site that would be fenced.

   U.S. EPA's Response: The current proposal includes a 6-foot-high cyclone fence topped with barbed wire located around the perimeter of the

property. Signs on the fence will identify the property as a Superfund site.

6. Mr. Ray Sapporito supported EPA's recommendation as long as the project oversight that was described actually takes place.

   U.S. EPA's Response: From the design phase through completion of construction and during monitoring, U.S. EPA and its representatives will oversee all remedial action work.

7. Mr. Vern Eall expressed a preference for removing all contaminants onsite as recommended under Alternative 6, but added that Alternative 3A is the most economically feasible alternative, the least disruptive to the community, and it has the least potential for further environmental damage.

   U.S. EPA's Response: Alternative 3A is the recommended remedy because it will minimize and mitigate threats to public health and welfare and the environment. The recommended alternative provides adequate protection of public health and the environment, and the shorter period of incineration will have less short-term impact on the community than Alternative 6. In addition, Alternative 3A will provide this protection at a substantially lower cost, making the selected remedy more cost-effective than Alternative 6.

8. **Leaseway Transportation Corporation supports the selection of Alternative 3A because of the expedient way it prevents contaminants from migrating offsite in a manner that was consistent with all obligatory criteria of the National Contingency Plan (except state acceptance). Leaseway questioned the need for a multilayered engineered cap in Alternative 3A. They asked whether a solution less extravagant than a multilayered cap but more effective than 2 feet of soil could be used without jeopardizing the alternative's effectiveness.**

U.S. EPA's Response: U.S. EPA acknowledges the support for its recommended remedy. An engineered cap is more reliable than a soil cover because it is thicker and because the synthetic barrier would provide visual indication of whether the cap has been breached or exposed. In addition, the multilayered cap virtually eliminates the potential for surface water to move through the soil and come into contact with the contaminated material and generate contaminated groundwater.

COMMENTS ON THE INCINERATOR

1. Mr. Vern Hall and Ms. Margaret Schossler had questions regarding the material to be incinerated and the byproducts of incineration. The questions pertained to:

   - o The type of pollutants to be incinerated
   - o The byproducts of incineration (dioxin, ash)
   - o Pollution control measures on the incinerator
   - o The toxicity of the byproducts

   U.S. EPA's Response: Under the recommended alternative, an incinerator would burn soil and ash from the boiler house. The materials being incinerated are contaminated with PCBs, dioxin, and other contaminants. The end products of incineration are ash and flue gases. It is difficult to predict the composition of the ash, but it will be tested regularly to ensure that it does not contain unacceptable levels of contaminants. If the ash contains unacceptable levels of contaminants it will either be reincinerated or treated as a hazardous waste and disposed of in an offsite licensed hazardous waste facility. The dioxins should be completely incinerated. Although dioxins are formed by the incomplete combustion of PCBs, the proposed incinerator has the capability to destroy dioxin. To control air emissions, the incinerator will be equipped with a number of pollution control

devices including a particulate scrubber that captures particulates, acid gases, and metals.

2. Ms. Margaret Schossler asked about the ownership of the incinerator to be used in the remedial action and the role of the PRPs in incineration.

   U.S. EPA's Response: The incinerator proposed for this project will be owned by the remedial action contractor. Its design will be examined and approved by U.S. EPA before it is allowed to begin operation. The incinerator will come from a manufacturer, and is not U.S. EPA's incinerator.

   The PRPs are under a U.S. EPA administrative order to conduct the operable unit incineration and as such are responsible for hiring a remedial action contractor to perform the incineration. There is as yet no resolution of whether PRPs or U.S. EPA will conduct the final remedial action. It is U.S. EPA's intent to have the PRPs conduct the final site remedial action, including incineration, in which case the same incinerator used for the Source Removal Operable Unit could be used.

3. Mr. Ray Sapporito said that his readings of research on PCB incineration indicated that effective PCB destruction through incineration is possible if the burn temperatures are hot enough.

   U.S. EPA's Response: PCBs can be destroyed effectively through incineration if the incinerators are built and operated according to specifications that include the proper temperatures and residence time.

4. Ms. Margaret Schossler felt that incinerators were incapable of burning at a temperature high enough to destroy PCBs.

   U.S. EPA's Response: Dioxins can be formed as a result of low temperature burning of PCBs. If

temperatures are not high enough there is the potential for the formation of dioxin. The EPA is aware of this and will prevent this phenomenon from occurring by requiring an incinerator capable of producing temperatures sufficient to destroy PCBs and by requiring a test burn and process controls that ensure the incinerator meets regulatory standards.

5. Ms. Margaret Schossler, Mr. Gabe Demshar, and Mr. Vern Hall had questions regarding monitoring incinerator emissions and reporting laboratory results of emission tests. Their questions pertained to:

   - o The people responsible for onsite monitoring of incinerator emissions
   - o The frequency and duration of monitoring and inspection activities
   - o The responsibility of hiring a laboratory to test emissions
   - o The ratio of onsite to offsite analyses
   - o The availability of test results for public inspection
   - o The turnaround time on emission tests
   - o The frequency of test burns and their role in determining standards for normal operation
   - o The air sampling plan

U.S. EPA's Response: Before full operation of the incinerator, a test burn will be done to establish the operation parameters. When the incinerator is operating full time, its emissions and operational parameters will be monitored regularly to ensure that the incinerator meets the standards set in the test burn. Although the onsite

monitoring will be done by the remedial action contractor and not U.S. EPA, U.S. EPA staff or its representatives will regularly monitor the results of the contractor performing the emission tests. The frequency of the tests depends on the sample being tested. Some parameters require continuous monitoring, whereas other parameters require less frequent monitoring. Some of the tests will be performed at the onsite laboratory. Other tests will be performed in offsite laboratories. Some parameters will be monitored by equipment installed on the incinerator. The test results for the various samples can be placed periodically in the local repositories. The parameters to be tested for and the testing procedures will be documented in a Quality Assurance Project Plan that will be developed and approved before actual testing.

6. Mr. Vern Hall and Ms. Margaret Schossler asked about the length of time the incinerator would operate and its noise level.

   U.S. EPA's Response: It will take approximately 3 months to incinerate the dioxin-contaminated materials onsite. As part of the source removal operable unit, the incineration will take approximately 8 months. It is important to note that incinerationn times are not additive. If incineration under the Source Removal Operable Unit remediation and the final remedy are combined, the incineration time for all the material in both operable units will be approximately 10 months. Once the permits are secured for operating the incinerator and the test burns are completed, the incinerator will operate 24 hours a day. The incinerator will be equipped with devices that lessen the noise.

7. Ms. Margaret Schossler stated that hazardous waste incineration is riddled with unknowns and that U.S. EPA's oversight of hazardous waste incineration has been inadequate. She also said

that the risks to health and the environment of a community that has an incinerator has risen. She stated that incineration is a controlled and officially sanctioned toxic waste leak through stack emissions and ash disposal.

U.S. EPA's Response: By law, the Superfund program is mandated to protect human health and the environment in selecting a cleanup strategy. The incineration planned for this site has been proven effective in other locations. U.S. EPA will monitor every phase of the incineration process from the design phase to emission tests when the incinerator is fully operational to ensure that the standards are being met. With the stringent controls and oversight U.S. EPA maintains in the incineration process, the health of the community and the environment will be protected.

8. Mr. Gene Trhlin stated that incineration is the lesser of two evils we have to accept until there is better technology.

U.S. EPA's Response: Incineration is the most effective means of destroying the contaminants present at the site. Incineration is a proven technology and when done according to our specifications the community's health and the environment are protected.

9. Mr. Vern Hall recommended that the incinerator's emission test results be posted at the Ashtabula County Disaster Services Office.

U.S. EPA's Response: Since the Ashtabula County Disaster Services Office functions as a local repository, emission test results can be placed there periodically.

PRP COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND U.S. EPA RESPONSES

This section addresses the written comments submitted on behalf of the PRPs during the comment period. A copy of the comments received are available from U.S. EPA, Region V. The comments in this section were submitted by:

- Freedman, Levy, Kroll & Simonds, Counsellors at Law, on behalf of Perfection Corporation
- Squire, Sanders & Dempsey, Counsellors at Law, on behalf of Ashland Oil, Inc., Cleveland Electric Illuminating Company, Consolidated Rail Corporation, White Consolidated Industries, Inc. (including its Copes-Vulcan and former R-P&C Valve Divisions), Shell Oil Company, Mobil Oil Corporation, Sun Refining and Marketing Company, Inc., Matlack, Inc., and Anchor Motor Freight, Inc.
- Fuller & Henry, Counsellors at Law, and Engineering-Science, Inc. on behalf of the Laskin Task Force

In addition to the comments listed below, the firm of Freedman, Levy, Kroll & Simonds also submitted comments concerning the Phased Feasibility Study of August 1987. Those comments and U.S. EPA's responses are found in the Responsiveness Summary that followed the Phased Feasibility Study and will not be repeated here.

1. **Freedman, Levy, Kroll & Simonds stated that U.S. EPA has inappropriately named Perfection in a CERCLA 106 Order and certain liable parties have inappropriately sued Perfection in a third-party action.**

   U.S. EPA's Response: The question of Perfection Corporation's status as a PRP and being named in a 106 Order are not factors in the choice of remediation action. These legal matters are under

consideration by U.S. EPA Regional Counsel or are the subject of ongoing litigation.

2. Freedman, Levy, Kroll & Simonds stated that U.S. EPA's heavy reliance on thermal treatment in the remedial action is not justified. The expensive thermal treatment recommended by U.S. EPA has increased the total cleanup cost to a level in excess of what is necessary to protect public health.

   U.S. EPA's Response: U.S. EPA studied nine alternatives before selecting the recommended remedial action. Within the nine alternatives the level of treatment varied. Some alternatives had no provision for treatment while others made it a major component of the cleanup process. In the process of selecting the recommended remedial action, U.S. EPA did not focus solely on the cost of the alternative. The alternative's cost was only one of nine criteria considered. After each alternative was evaluated for the nine criteria, Alternative 3A was selected as the remedial action because it represented the best balance among the evaluation criteria. Alternative 3A will incinerate the least amount of contaminated material of the four alternatives that relied on incineration.

3. Squire, Sanders & Dempsey, and Freedman, Levy, Kroll & Simonds stated several concerns about U.S. EPA's ability to perform remedial action at the Laskin site. They are:

   - U.S. EPA may only perform remedial action at the Laskin site if that action is necessary as a result of a release or threatened release of hazardous substances

   - The fact that petroleum and its constituents are not hazardous substances means that U.S. EPA cannot use Superfund monies to respond to releases of petroleum.

- The feasibility study does not distinguish petroleum from hazardous substances, and thus fails to indicate whether any potential Agency remedial action would be authorized by law.

U.S. EPA's Response: It is clear that there have been releases and threats of releases of hazardous substances at and from the site. Whether these substances are mixed with petroleum products has no bearing on the obligation and authority of the U.S. EPA to respond to such threats or require others to do so. The scope of the petroleum exclusion is, as this commenter is aware, the subject of litigation pending in the Northern District of Ohio. The U.S. EPA believes the FS correctly addressed the types and effects of the hazardous substances present at the site.

4. Freedman, Levy, Kroll & Simonds stated that U.S. EPA's "land ban" concerns may have been based on erroneous constructions of the law and U.S. EPA has never satisfactorily explained how it has reached its conclusions. The commenter did not specify the nature of the "erroneous constructions" of the "land ban" law.

U.S. EPA's Response: The applicability of the land ban is based on U.S. EPA's interpretation that when wastes from different units are put into one unit, placement of hazardous waste has occurred, thus triggering the restrictions. The tanks are clearly separate units from the pits or whatever other area that could be chosen for consolidation.

5. The Laskin Task Force and Freedman, Levy, Kroll & Simonds stated that if U.S. EPA selects Alternative 3A, the source removal operable unit and the final remedy should be combined.

U.S. EPA's Response: U.S. EPA would like to combine the source removal operable unit and the final remedy in an effort to reduce the total cost of the remedial action, to reduce the impact on the community, and to accelerate the cleanup required under the Source Removal Operable Unit remedial action.

6. Freedman, Levy, Kroll & Simonds stated that U.S. EPA and the PRPs should reach a settlement on this site by focusing on a settlement in a coordinated fashion.

U.S. EPA's Response: It is in the public's best interest to reach a rational and integrated settlement at the site and U.S. EPA is actively pursuing this. The scope and form of a settlement are not issues that need to be addressed in connection with the ROD.

7. Squire, Sanders & Dempsey stated that, to the extent that U.S. EPA's proposed remedial action purports to be based on the need to address problems presented by PCBs and certain other hazardous substances, the PRPs should not be held liable for such costs because they sent no materials aside from petroleum.

U.S. EPA's Response: Issues of PRP liability are not properly addressed in connection with the ROD.

8. Squire, Sanders & Dempsey stated that U.S. EPA must consider all phases of remediation at the site in determining the overall cost effectiveness of the remediation. Since the final proposed remediation included capping, the FS should have considered whether the use of a cap could eliminate the need for heat treatment, thereby lowering the total cost of remediation at the site.

U.S. EPA's Response: The FS determined that capping the contaminated area of the site would

not reduce the toxicity, mobility, and volume of the dioxin-contaminated material. Under SARA, there is a preference for selecting alternatives that include treatment. This is particularly important when dealing with dioxin because of its high toxicity. Alternative 3A provides a balance where certain contaminated materials are treated and others are contained in a cost-effective manner that protects human health and the environment.

The Source Removal Operable Unit remedy was selected before the final remedy, consistent with Section 300.68(c) of the National Contingency Plan (November 20, 1985), which states that operable unit implementation may begin before selection of an appropriate final remedial action if such measures are cost-effective and consistent with the permanent remedy. The findings of cost-effectiveness and consistency with the permanent remedy were made for the Source Removal Operable Unit in the ROD for that remedy selection dated September 30, 1987.

Hazardous waste landfill capping was considered in the operable unit remedy selection and was determined an inappropriate remedial action for these materials given the CERCLA Section 121 preference for remedial actions that include treatment that permanently and significantly reduce volume, toxicity, or mobility of hazardous substances and concerns about the long-term effectiveness of capping to contain these materials. It was in the judgment of the U.S. EPA that, since the soils to be remediated under the Source Removal Operable Unit remedial action are saturated, the nonaqueous liquid hazardous material contained in the soil would still have the potential to migrate even after the site is dewatered.

The final remedy, which includes placement of a hazardous waste landfill cap over the remaining

site contaminated soils, is consistent with the Source Removal Operable Unit remedy selection and does not render that remedial action not cost-effective.

9. The Laskin Task Force and Squire, Sanders & Dempsey acknowledge Alternative 3A's superiority to Alternatives 4, 5, and 6 with respect to cost effectiveness, implementability, and protection of the environment and human health.

   U.S. EPA's Response: U.S. EPA acknowledges support for its recommendation.

10. The Laskin Task Force and Squire, Sanders & Dempsey stated that the dioxin vault should be placed in a location that will minimize disturbance or damage to the site, including the cap, if future dioxin removal or treatment is necessary.

    U.S. EPA's Response: The final location of the dioxin vault will be determined during remedial design. The vault will be located to minimize disruption to the cap and provide protection to the public during the temporary storage of the dioxin-contaminated material.

11. Squire, Sanders & Dempsey stated that the proposed remediation of the retention pond and drainage of the freshwater pond, two areas considered uncontaminated by U.S. EPA, unnecessarily increase the total project cost.

    U.S. EPA's Response: The retention pond and the freshwater pond are being filled because they act as recharge areas for the groundwater onsite and they are in direct conflict with the cap. Filling the ponds will help lower the groundwater table onsite, reducing the amount of water that passes through the contaminated soil.

12. Squire, Sanders & Dempsey stated that U.S. EPA cannot support its proposed remedial action for the source control operable unit with a risk assessment that is inaccurate and incomplete.

U.S. EPA's Response: This comment has been answered in the Responsiveness Summary for the 1987 phased feasibility study.

13. Squire, Sanders & Dempsey stated several concerns about the feasibility study's assumptions about dioxin contamination and the proposed remedy. They are:

- o The assumption that the entire boiler house structure is contaminated and that the soil is contaminated to a depth of 3 feet is inappropriate.
- o The feasibility study provides no valid basis for the selected dioxin remedy.
- o There is no need to segregate the dioxin-contaminated material and other matter. U.S. EPA should consolidate the boiler house equipment under the cap.

U.S. EPA's Response: Sufficient information was gathered during the RI to compare alternatives in the FS and choose a remedy in the Record of Decision. In addition, dioxins were found in the soil floor of the boiler house, in the boilers, and in the ash from the smokestack. With documented dioxin contamination this widespread, it was felt that other parts of the boiler house were also contaminated and the decision was made to incinerate the entire structure. While it is true that the FS did assume the boiler floor was contaminated to a depth of 3 feet, that assumption was viewed as a conservative estimate. Additional data must be collected during the remedial design to refine the extent of dioxin contamination.

These data will then precisely define the soil that needs to be incinerated.

The site-specific remedial action goals for the boiler house soil and ash are identical to those for the other onsite soil, but because of the presence of highly toxic dioxins they are not grouped with the other soil. Dioxin-contaminated materials must conform to special treatment and disposal requirements (i.e., destruction and removal efficiencies). Keeping the dioxin-contaminated materials separate will allow for the ultimate disposal of materials that cannot be thermally treated or decontaminated.

14. Squire, Sanders & Dempsey stated that the heat treatment remedy for dioxin-contaminated equipment and soil may not be cost-effective if the PRP-directed cleanup of the source operable unit does not include onsite incineration.

U.S. EPA's Response: It has already been determined that incineration of the source material in the source operable unit will take place onsite.

15. Squire, Sanders & Dempsey stated that it may be unnecessary to pursue both heat treatment and the concrete vault.

U.S. EPA's Response: The concrete vault, unlike thermal treatment, is not viewed as a permanent treatment. The vault will hold dioxin-contaminated wastes that are not amenable to incineration or decontamination at this time. When the ultimate disposal of the dioxin-contaminated materials is determined by U.S. EPA, they will be removed from the vault and disposed of. Currently, there are no known commercial facilities that will accept dioxin-contaminated material for treatment or disposal.

17. Squire, Sanders & Dempsey stated that U.S. EPA has violated due process, SARA administrative procedures, and the Freedom of Information Act by failing to provide sufficient time to comment on the remedial investigation and the feasibility study.

U.S. EPA's Response: The public comment period must last a minimum of 21 days as specified under the National Contingency Plan. A 30-day comment period for the site extended from April 12 to May 12, 1989. On April 12, 1989, the U.S. EPA published announcements of the availability of the Proposed Plan and FS documents in two separate local newspapers. The U.S. EPA feels adequate time was provided for review of and comment on the feasibility study.

Furthermore, the RI report has been available for public review since December 1988. It was available at the U.S. EPA Region V offices in Chicago and in the two established public repositories near the site (Ashtabula County Disasters Services Office and the Ashtabula County District Library). A copy of the RI report could also have been obtained from the U.S. EPA.

18. The Laskin Task Force stated that the additional benefit of an interceptor trench should be evaluated after the impacts of draining and filling the ponds is assessed. The groundwater table should be monitored throughout the site remediation and the decision about the necessity of the diversion trench should be delayed until near the end of remediation.

U.S. EPA's Response: The purpose of the groundwater trench is to prevent groundwater flowing toward Cemetery Creek from coming in contact with the contaminated soil. It is true that groundwater inflow at the site is a small percentage of the base flow from the site. During the remedial design phase, after the pond

dewatering, groundwater volumes will be reassessed and the location and size of the trench will be reexamined. Current information from the site, however, indicates that the diversion trench is necessary to effectively divert upgradient groundwater to prevent that groundwater from coming into contact with contaminated soils.

19. The Laskin Task Force stated that the onsite residents should relocate to an area away from the site during construction and operation of the remedial action.

    U.S. EPA's Response: Although U.S. EPA does not intend to relocate the site's residents during the remedial action, it would be to their advantage to relocate during that time and the U.S. EPA will inform them accordingly.

20. The Laskin Task Force stated that capping the contaminated soil onsite will attain the goals of protecting public health by isolating contaminated soil from possible future contact and limiting infiltration and future impacts on groundwater quality.

    U.S. EPA's Response: U.S. EPA acknowledges support for its recommendation.

21. The Laskin Task Force stated that the methods for implementing the components of Alternative 3A, including choosing the location of the dioxin vault, should be described in the remedial design document, not in the Record of Decision.

    U.S. EPA's Response: The feasibility study's selected alternative and the Record of Decision describe the general concept of the remedial action. The final vault location will be determined during the remedial design phase.

OHIO EPA COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND U.S. EPA RESPONSES

This responsiveness summary addresses the written comments submitted by the Ohio EPA during the comment period. A copy of the comments received are available at U.S. EPA, Region V, Chicago.

1. A number of comments and questions concerned the proposed cap and diversion trench. These include:

   - Alternatives 3A, 4A, and 5A do not convincingly demonstrate that the remedy will eliminate recharge to the area of groundwater contamination under the site.

   - In Alternative 3A, an uncapped area ranging in width from 25 feet to 50 feet will exist between the cap and the landfill. How will surface runoff from the cap and precipitation falling on that area be diverted?

   - How will surface drainage from the capped area be tied into the diversion trench?

   U.S. EPA's Response: The FS report describes the general concept and the approximate location of the cap and trench. The engineered scheme presented in the report will be designed to provide effective dewatering of the site. During remedial design, the exact locations of the cap and trench will be determined based upon design investigations. The cap will be designed to allow virtually no infiltration into the contaminated soil inside the diversion trench, as it is anticipated that there will be no uncapped area inside the diversion trench (see Attachment B). All surface runoff from the cap will be directed outside the perimeter of the trench further preventing recharge to the contaminated area.

2. How will the deed restrictions, access restrictions, and site fencing apply to the onsite resident? Also, what is the proposed location of the site fencing?

   U.S. EPA's Response: The effect of the proposed institutional controls on the site residents will be to bar interference with or damage to the remedial action (i.e., excavation through the cap, installation of groundwater wells). Additional and augmented onsite fencing will be installed as part of the Source Removal Operable Unit remedial action, which is currently being designed. The location of the fence will be determined during design.

3. The following requests were made for collection of additional data:

   - Additional groundwater and surface water testing is needed before remedial design.
   - Soil samples should be taken on slope.
   - A boring should be taken in the boiler house.
   - The boiler house dimensions should be measured accurately.
   - Hydrotesting should be performed to determine the need for groundwater treatment.

   U.S. EPA's Response: It is the opinion of the U.S. EPA that sufficient data collection was performed during the remedial investigation to compare alternatives in the feasibility study and choose a remedy for the site. During remedial design, additional data will be collected to ensure the proper design of the remedial action. Collection of additional data could possibly include any or all of the commenter's suggested actions. An exception would be hydrotesting. The need for hydrotesting is questioned since the

remedial action will effectively dewater the aquifer beneath the site, making treatment of site groundwater unnecessary.

4. Cross section B-B' should be added to Figure 1-4 in the feasibility study.

   U.S. EPA's Response: This cross section is presented in the RI report (Figure 3-3).

5. The final feasibility study was not clear whether a specific task (i.e., preparation of a specific area for incineration) would be taken in the final RD/RA or during the Source Removal Operable Unit RD/RA.

   U.S. EPA's Response: The feasibility study assumed that the final remedial action and the Source Control Operable Unit remedial action would not be conducted concurrently. However, the feasibility study did estimate that there could be a cost savings if the two remedial actions were done concurrently. It is not currently known if the site must be prepared either once or twice for incineration activities.

6. Because Alternative 6 leaves dioxins in an onsite vault, it does not meet RCRA closure performance for contaminated groundwater. Therefore this alternative cannot be considered a clean closure.

   U.S. EPA's Response: When the dioxin vault is removed and the groundwater has dissipated, the site will be considered a clean closure. Until that time, short-term management of the site is required.

7. The dioxin vault does not appear to meet Resource Conservation and Recovery Act (RCRA) requirements concerning secondary containment and detection of releases.

U.S. EPA's Response: The vault will be designed to meet RCRA tank requirements (40 CFR Section 264.192), the relevant and appropriate regulations for determining the storage structure for the dioxin-contaminated waste.

8. The Uniform Relocation Assistance and Real Property Acquisition Policies Act allows FEMA to assess valuation of property if acquired as a part of the remedial action.

U.S. EPA's Response: The remedial action does not at this time include acquisition of the property. It is possible, however, that information gathered during the design of the final remedy would indicate a need to acquire the property and relocate the site residents to properly implement the remedy. If this situation arises, the U.S. EPA will follow the appropriate procedures to relocate and properly compensate the property owner.

9. Since the most protective multilayer cap is the composite design using both a geotextile material and a clay layer, it appears reasonable to import fill that would allow for the selection of the more protective technology.

U.S. EPA's Response: The multilayer cap (soil and geotextile) proposed in Alternative 3A, the selected alternative, exceeds RCRA's hydraulic conductivity criteria for closure. The additional cost of importing clay ($300,000) was based mainly on additional transportation costs. Clay was assumed to require transportation over a greater distance. The cost differential between soil and clay could be less depending on the location of the provider. At the time of construction bidding, the cost differential between clay and soil fill could be evaluated and the clay necessary to construct a 2-foot layer in the cap could be imported in lieu of the corresponding amount of soil.

10. An east-west cross section of the proposed grading plan and a cross section showing the proposed cap in relation to the diversion trench should be provided.

    U.S. EPA's Response: These cross sections will be developed during remedial design.

11. Where will contaminated soils be stockpiled while building the RCRA landfill?

    U.S. EPA's Response: The recommended alternative does not include an onsite RCRA landfill. This option was eliminated from consideration due to implementability concerns, including lack of room onsite to allow stockpiling of contaminated soil during construction of a RCRA landfill.

12. Site groundwater monitoring must comply with RCRA post-closure groundwater monitoring requirements. Monitoring should include both the shallow and deep aquifers.

    U.S. EPA's Response: U.S. EPA agrees with this recommendation.

13. Alternatives 2 through 5B should include deed restrictions, access restrictions, and site fencing. Alternative 6 should include deed and access restrictions and site fencing for the dioxin storage area.

    U.S. EPA's Response: Table 4-3 in the FS report indicates that deed restrictions or other use or institutional restrictions will be used.

14. The no-action alternative states that risk would not increase from no action. Hypothetically, events could take place under the no-action alternative that could increase risk to receptors.

U.S. EPA's Response: The risk assessment addresses those risks with a reasonable probability of occurring. Hypothetically, many extremely low probability events not considered in the risk assessment could occur, which would increase risk at the site under no action above the risk currently described in the FS report. It should be noted, however, that the FS report describes the risk at the site as unacceptable under the no-action alternative.

15. Treatment of groundwater under Alternatives 3A, 4A, and 5A would result in a greater reduction in onsite contaminant mass than the incineration of dioxin-contaminated materials.

U.S. EPA's Response: Contaminated groundwater is not seen to pose a threat at this time because of the lack of exposure routes under current use conditions. Dewatering the site under Alternative 3A will prevent any future generation of contaminated groundwater. However, not actively remediating the dioxin-contaminated material does pose an unacceptable public health threat. The U.S. EPA agrees with the commenter's assessment, but stands by its determination that Alternative 3A is the appropriate remedy.

16. Ohio EPA's preferred alternative is Alternative 6. While subject to results of needed treatability studies, Alternative 6 seems to leave the Laskin Poplar site suitable for unlimited future use. Alternative 3A requires an indefinite period of institutional controls to be adequately protective.

U.S. EPA's Response: The U.S. EPA responded to these concerns in a letter to Richard L. Shank dated May 22, 1989 (see Attachment C).

GLT902/001.50

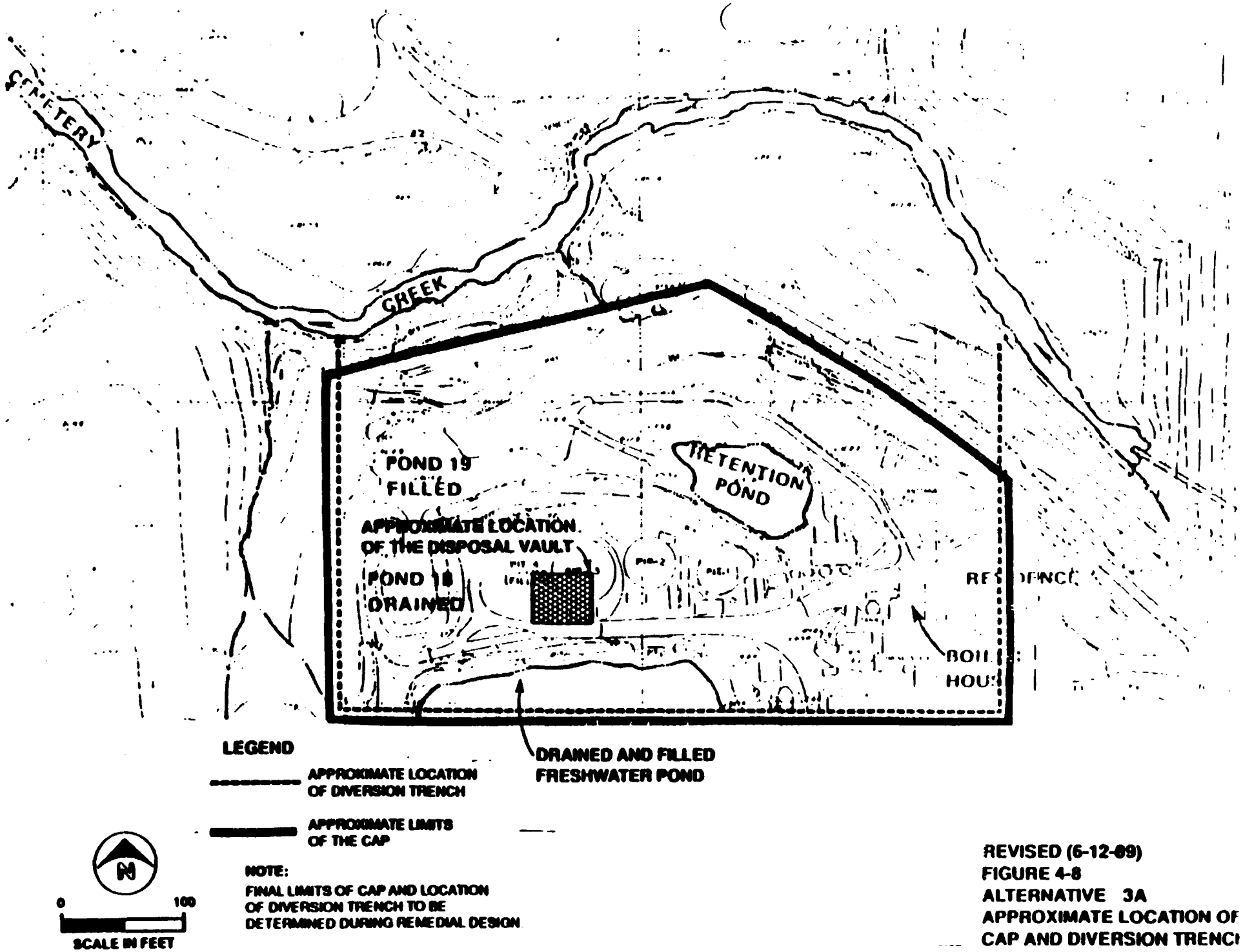
Attachment A
COMMUNITY RELATIONS ACTIVITIES CONDUCTED
AT LASKIN POPLAR OIL SITE

Attachment A
COMMUNITY RELATIONS ACTIVITIES CONDUCTED
AT LASKIN POPLAR OIL SITE

1983	Public meeting held to describe Phase I RI process.
1983	Community Relations Plan prepared
August 1987	Fact sheet prepared describing Phase II RI study and focused Feasibility Study
	Availability session held with U.S. EPA staff to discuss onsite progress
	Public meeting held to accept comments on the focused FS for the source material removal operable unit
March 1989	Community Relations Plan updated
	Fact sheet prepared describing RI findings and the scope of the sitewide FS
April 1989	Fact sheet prepared describing completed FS, alternative methods for site cleanup, and the recommended remedial action
	Public meeting held to accept comments on the sitewide FS and U.S. EPA's proposed final remedy.

GLT902/003.50

Attachment B
FIGURE 4-8 (FEASIBILITY STUDY REPORT), REVISED



REVISED (6-12-89)
FIGURE 4-8
ALTERNATIVE 3A
APPROXIMATE LOCATION OF
CAP AND DIVERSION TRENCH

Attachment C
RATIONALE FOR SELECTION OF ALTERNATIVE 3A
LETTER TO OHIO EPA
MAY 22, 1989

5RA-14

MAY 2 2 1989

Richard L. Shank, Ph.D.
Director
Ohio Environmental Protection Agency
P.O. Box 1049
1800 Watermark Drive
Columbus, Ohio 43266-0149

Dear Dr. Shank:

Thank you for your letter of April 25, 1989. I am writing to address your concerns about the proposal of Remedial Alternative 3A as the United States Environmental Protection Agency's (U.S. EPA's) preferred remedy for the Laskins/Poplar Oil site. This preferred remedy was included in the Proposed Plan, which was issued April 12, 1989. I also feel it is necessary to briefly examine the necessity of a treatability study in order to properly evaluate Remedial Alternative 6.

As you indicated, our initial review of Alternative 6 suggested the remedy might allow for unlimited future use at the site. However, upon further review, we concluded Alternative 6 would, in fact, require long-term operation and maintenance (O&M). This O&M involves on-site management of any remaining dioxin-contaminated debris and hazardous waste disposal of any lead-containing residue ash that would not meet hazardous waste delisting criteria. Treatability studies do not appear necessary to conclude that a significant portion of this material will need to be managed a hazardous waste.

Alternative 6 also involves greater short-term risks than Alternative 3A. Remedial Alternative 3A is fully protective of human health and the environment. Alternative 3A, in combination with the operable unit currently being designed, treats the most hazardous material at the site. Comments received from the community thus far have expressed great concern about incineration activities at the site. This concern was a factor in the proposal of Remedial Alternative 3A, which incinerates only the most hazardous materials, and minimizes the duration of incineration.

RECORD OF DECISION
Remedial Alternative Selection
Source Removal Operable Unit

SITE: Laskin/Poplar Oil - Ashtabula, Ohio

PURPOSE:

This decision document represents the selected remedial action for the operable unit for the Laskin/Poplar Oil site. It was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, the National Contingency Plan of 1985 (NCP) (40 CFR Part 300).

The State of Ohio has concurred on the selected remedy, as stated in the attached Letter of Concurrence.

BASIS:

The selection of remedy is based upon the Laskin/Poplar Oil site Administrative Record. The attached index identifies the items which comprise this record.

DESCRIPTION OF SELECTED REMEDY:

The selected remedy consists of the following major components:

- construction of a fence around the contaminated portions of the site and the on-site incinerator;
- on-site incineration of oils, sludges, and highly contaminated soils;
- off-site treatment of all wastewater, decontamination water, and scrubber water;
- off-site disposal of all incinerator ash;
- dismantling and off-site disposal of all tanks;
- crushing and incineration of the cinder block walls of the pits;
- backfilling and/or grading of all excavated areas to preclude ponding.

DECLARATION:

Consistent with CERCLA, as amended by SARA, and the NCP, I have determined that the remedy described above is a cost-effective interim remedy. This action is

protective of human health and the environment, attains Federal and State applicable or relevant and appropriate requirements, and is cost-effective. This option will not require any long-term operation and maintenance activities. This remedy satisfies the preference for treatment that reduces toxicity, mobility, or volume as a principal element. Finally, it is determined that the remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

The United States Environmental Protection Agency (U.S. EPA) is continuing its comprehensive Remedial Investigation/Feasibility Study (RI/FS) for the Laskin/Poplar Oil site. Phase II of the RI is scheduled to begin during the 1st Quarter of Fiscal Year 1988 and will further characterize the site, major migration pathways, and extent of dioxin contamination. The U.S. EPA is planning to complete the remaining tasks of the RI/FS by late 1988. This will include the identification and evaluation of potential final remedial actions. If additional remedial actions are determined to be necessary, a Record of Decision will be prepared for approval of the future remedial actions.

September 30th, 1987

Date

Valdas V. Adamkus

Valdas V. Adamkus
Regional Administrator
United States Environmental Protection
Agency, Region V

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

LASKIN/POPLAR OIL SITE

SOURCE REMOVAL OPERABLE UNIT

SITE LOCATION AND DESCRIPTION

The Laskin/Poplar Oil site is located west of the village of Jefferson in Ashtabula County, Ohio. The site occupies approximately 9 acres. The general site location is shown in Figure 1.

The site is bounded on the north by Cemetery Creek, on the south and east by the Ashtabula Fairgrounds, and to the west by wooded areas. A map of the site is shown in Figure 2. The following facilities and structures are located on site:

- The residence of Mr. Alvin Laskin, property owner;
- A boiler house, four boilers, and a stack;
- Several greenhouses;
- Thirty-four tanks;
- Four pits;
- A retention pond, a freshwater pond, and two treatment ponds; and
- Miscellaneous sheds and buildings.

SITE HISTORY

A greenhouse operation started at the Laskin/Poplar oil site approximately 80 years ago. Boilers were installed approximately 30 years ago to heat the greenhouses. During the 1960's, tanks were installed to hold waste oil to fire the boilers. The oils were not analyzed prior to acceptance, and oil containing PCB's and other hazardous constituents were accepted.

When the greenhouse business deteriorated, the owner began collecting, reselling, and disposing of waste oils. These activities included oiling roads in Ashtabula County. Through a series of legal actions, the company was placed into receivership. All on-site business activities relating to oil have stopped.

Remedial activities began in December, 1980 and the site is presently involved in a comprehensive federal-lead Remedial Investigation/Feasibility Study (RI/FS) which will be completed in 1988. This action is an operable unit to address the source material onsite. It will be consistent with the final remedy to the greatest extent practicable.

Several emergency actions have taken place at the site since the U.S.EPA first became involved. During 1982, Superfund planned removal operations removed 302,000 gallons of waste oil, treated and released 430,000 gallons of contaminated water and solidified 205,000 gallons of sludge. In 1985-86, the potential responsible parties (PRP's) removed approximately 250,000 gallons of oil and wastewater from the site. All of the pits have been covered.

CURRENT SITE STATUS

Phase I of the remedial investigation (RI), which characterized the Laskin/Poplar Oil site and identified potential pathways for chemical migration, has been completed. Field work for Phase II of the RI is scheduled for 1QFY88 and will provide detailed information on groundwater, soil, and dioxin contamination. The ROD for the overall site is expected some time in 1988.

Data collected during the Phase I of the RI and by the PRPs has shown that further action is required at the site. Of immediate concern is the bulk waste material still present at the site and the potential risk to public health, welfare, and the environment the waste material presents. The waste present on the site include the following:

- Approximately 6000 gallons of oil
- Approximately 60,000 gallons of wastewater
- Approximately 705,000 gallons of sludge

A more detailed breakdown of the waste volumes is given in the Appendix of the phased feasibility study.

The types of contaminants present in the wastes include polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs). The levels of contaminants found in the waste material are summarized in Table 1. The soils immediately surrounding the pits are expected to have contaminant levels commensurate with those found in the sludges and oils. Lower levels of contaminants are found in the borings surrounding the pits. Soils which are visibly contaminated will be considered "source" soils and will be included in this source removal operable unit.

RISK TO RECEPTORS VIA PATHWAYS

There is a continuing potential for a release of the contaminated liquids and sludges to the environment. A release could occur through fire, natural deterioration of the tanks and their fittings, seepage through the sides and unlined bottoms of the pits, and accidental or deliberate acts. A release from any of these routes would have the potential to contaminate surface water, groundwater, and soil.

The route of greatest concern is seepage from the sides of the pits and the unlined bottoms of the pits. Seepage from the pits would have the potential of contaminating groundwater and soil. Groundwater samples taken by EPA contractors and soil samples taken from around the pits indicate releases have already occurred. The soils immediately surrounding the pits are expected to contain contaminants at levels similar to those found in the sludges and oils in which they are in contact. The continued presence of these waste materials would allow more seepage to occur.

There is a potential for fire at the site. The wastes in Pit 2 have a flash point of only 80-85 F, and much of the oils and sludges have high BTU values. A fire, started by whatever means, could create a contaminated smoke plume and could release contaminated materials to the site and surrounding area.

Based on surface topography, contaminants released on site have the potential of being carried into Cemetery Creek. Cemetery Creek empties into the Grand River which supplies the drinking water for approximately 25,000 people in Ashtabula County.

PCBs

PCBs are absorbed through the lungs, the gastrointestinal tract, the intact skin, and (in experimentally exposed animals) the eyes. After absorption, PCBs circulate through the body in the blood and accumulate in the liver, adrenal glands, and skin.

The most significant concerns from PCBs are the chronic effects which are manifested over prolonged, but not necessarily continuous, exposure to low levels. Many of the toxic effects in mammals have been noted at extremely low levels of exposure, in several species at dietary levels of only 1.0 to 2.5 ppm or less. The toxic effects of PCBs in humans have been reported both as a result of occupational exposures and in the general population. PCBs have been shown to be carcinogenic in rats and mice, and there is evidence that it might cause stomach and liver cancer in humans. The Office of Health and Environmental Assessment (OHEA) of the U.S.EPA developed health advisories for PCBs in soil. The OHEA assessment concluded that a PCB level of 1 to 5 ppm in soil in a residential/ commercial area would be associated with a 1x10-5 level of oncogenic risk.

The levels of PCBs in the oils are above 50 ppm in every sample taken and are as high 170 ppm. The levels in the sludges are generally greater than 20 ppm and are found as high as 238 ppm. The levels of PCBs found in the borings nearest to the pits, approximately 4 to 6 feet, are below 3 ppm.

METALS

Lead is the metal of primary concern found in the waste material. The main routes of exposure for lead are inhalation and ingestion. The Centers for Disease Control (CDC) have stated that soil and dust levels of greater than 500-1000 ppm appear to be responsible for blood levels in children increasing above background levels. The major health effects associated with lead concern damage to the hematopoietic and neurological system. Lead can cause renal dysfunction, and is known to be teratogenic to animals. There is evidence that young children are more sensitive to the toxic effects of lead than are adults.

The levels of lead in the oils range from 30-543 ppm. The level of lead in the sludges range from 69-12,400 ppm.

POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs)

A number of PAHs were identified in the base/neutral analysis for the sludges. As a group, PAHs are persistent in the environment. Some PAHs are carcinogenic and mutagenic. Materials such as tars and oils, known to contain PAHs, have been shown to be carcinogenic to humans. According to the regional spokesperson for the Agency for Toxic Substances and Disease Registry (ATSDR), CDC considers total average PAH levels of up to 100 ppm in residential areas and 1000 ppm in comercial areas acceptable.

The levels of total PAHs in the sludges range from 428 ppm to over 82,000 ppm.

VOLATILE ORGANIC COMPOUNDS (VOCs)

No health based standards for VOCs in soil currently exist. However, some of the VOCs found at the site are considered toxic or are carcinogens. A number of the VOCs in the sludges can be found at levels greater than 10,000 ppm. The level of VOCs in the closest soil borings to the pits can be found at greater than 1 ppm.

ENFORCEMENT HISTORY

State actions at the Laskin/Poplar Oil site include a complaint filed in the Ashtabula County Court of Common Pleas in April 1979 for air and water pollution violations. The owner/operator was found liable by the court and ordered to cleanup the site. The owner/operator was found in contempt of court on several occasions and a receiver was appointed for the business by the Ashtabula County Court of Common Pleas court on December 22, 1980. The owner/operator entered into a consent decree with the Federal Government on January 21, 1981. The consent decree required the owner/operator to cleanup the site, halt discharge of contaminated water to Cemetary Creek, and abide by TSCA PCB rules.

After several emergency fund-financed removals between 1980 and 1983, a unilateral Administrative Order (AO) was issued to four PRPs in August 1984. This AO required the removal and incineration of the bulk of the contaminated oil and treatment of the contaminated water that was contained in the pits and tanks on site. This order was complied with during the winter of 1985-86.

A second unilateral AO, to eight PRPs, was issued in July 1986. This order, which originally required the removal and incineration of the remaining sludge, was amended in September, 1986. The amended AO required the development of a workplan to remove and incinerate the sludge and to sample the soils around the in ground pits. This workplan was submitted in March 1987.

Additionally, while these administrative enforcement activities were taking place, the U.S.EPA was pursuing a cost recovery action to recover the monies spent on the emergency actions. The first complaint was filed in June 1984. Amended complaints were filed in December 1984, July 1985, and October 1986. Currently there are eleven defendents in this action including the owner/operator, the operating company (Poplar Oil Co.), a finance company, and eight corporations which generated wastes sent to the site. These defendents have sued an additional 600 third parties, have settled with approximately 30, and have since dismissed another 30 for lack of evidence. Settlement discussions on this action are on-going.

COMMUNITY RELATIONS HISTORY

U.S.EPA's community relations activities at the Laskin/Poplar Oil site date back to 1981, when the agency conducted emergency actions to prevent oil from leaching off the site. Between July and November, 1982, U.S.EPA conducted a removal at the site which resulted in the elimination of the site's most imminent-hazards. A Community Relations Plan (CRP) was prepared and implemented during that time.

The public comment period for this operable unit stated on August 10, 1987 and went through September 11, 1987. On August 18, 1987, a public availability session was held at the Jefferson Courthouse, giving area residents an opportunity to meet and talk with staff about site activities. On August 26, U.S.EPA held a public meeting to accept comments on the feasibility study for the source material removal operable unit.

Health issues have and continue to be a major source of concern for the citizens. Concerns center around the pathways of possible exposure to contaminants during the period of the site's operation. These include exposure to the burning of PCB contaminated oil, the road spreading of the oil, and the presence of dioxin. Questions and comments posed by the community and the PRPs are included in the attached responsiveness summary.

ALTERNATIVES EVALUATION

The major objective of the phased feasibility study (PFS) is to evaluate remedial alternatives for the removal of source material from the Baskin/Poplar Oil site. Source material includes the sludges, oils, and wastewaters as well as highly contaminated soils. The clean-up approach established for this operable unit was developed to address the materials which may serve as a source for further site contamination and is not meant to serve as the final remediation level for the site. All attempts have been made to keep the actions of this operable unit consistent with the final remedy to the extent it can be anticipated.

The remedy selected will be consistent with the goals and intent of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and the National Oil and Hazardous Substances Contingency Plan (NCP) (40 CFR Part 300 et. seq., 47 Federal Register 31180, July 16, 1982).

An environmental assessment presented in Chapter 2 of the PFS determined that source control measures are needed at the site. A list of appropriate remedial response technologies was identified. Each technology was screened based on its technical feasibility and implementability. The following technologies were considered appropriate technologies:

Oils/Sludges/Soils
- On-site containment
- Off-site containment
- On-site land treatment
- On-site incineration
- Off-site incineration
- On-site incineration/ Off-site containment

Wastewaters
- On-site treatment
- Off-site treatment

Tanks
- Dismantling/Off-site disposal

Technologies which were eliminated from further consideration include on-site containment, on-site land treatment, and on-site wastewater treatment. The on-site containment option encompased the placement of the source soils and the waste from the tanks and pits into an on-site waste disposal unit. This option was not considered implementable due to the impending November 8, 1988 deadline imposed by the Land Disposal Restrictions. The Land Disposal Restrictions prohibit the land disposal of all wastes included on the California List and solvent wastes from

catagories F001-F005. The design, construction, disposal, and closure would all need to be finished prior to the November 8, 1988 deadline. Land treatment was not considered technically feasible for the treatment of the levels of PCBs and halogenated organics found in the waste materials. On-site wastewater treatment was not considered technically feasible, based on the volumes expected and the difficulty in achieving discharge requirements due to the wide variety of organics compounds and levels of lead found in the waste. The wastewaters would be more suited for treatment at a comercial wastewater facility.

Remedial action alternatives were developed from the remaining technologies. These alternatives were then compared on cost effectivness, protectiveness to the public and the environment, and compliance with the requirements and intent of SARA. A comparative evaluation of the alternatives is shown in Table 2.

Alternative 1

Under this alternative, no remedial action would be taken at the site. The threat to public health and the environment, as described earlier and in the FS, would remain.

Alternative 2

Alternative 2 consists of solidifying all of the liquid wastes and placing all of the source material in a licensed TSCA or RCRA facility as appropriate. All tanks would be dismantled and taken off-site. The pit area would be backfilled with on site soils and graded to preclude ponding.

No long term maintenance or monitoring at the Laskin/Poplar Oil site would be required under this alternative. However, the waste would not be treated prior to landfilling at the licensed facility. The long term dependability of any landfill is unknown. The cost estimate for Alternative 2 is $4.2 million.

Alternative 3

Alternative 3 combines on-site incineration of the oils, sludges, and source soils with off-site treatment of the wastewaters, decontamination water, and scrubber water. The incinerator ash and dismantled tanks would be disposed in an off-site RCRA licensed facility. If tests indicated that the ash could be delisted, the ash could be sent to a sanitary lanfill. The excavated pit area would be backfilled with onsite soils and graded to preclude ponding.

This option would not require any long term maintenance or monitoring at the site. All source material would be treated to the greatest extent practicable. The cost estimate for alternative 3 is $8.5 million.

Alternative 4

Alternative 4 utilizes off-site incineration for all oils, sludges, and highly contaminated soils. All wastewaters and decontamination water would be treated at an off-site treatment facility. The tanks would be demolished and disposed of at a licensed facility off-site. The excavated areas would be backfilled with on-site soils and graded to preclude ponding.

This option would not require any long term maintenance or monitoring at the site. All source material would be treated to the greatest extent practicable. The cost estimate for Alternative 4 is $12.2 million.

Alternative 5

Alternative 5 includes on-site incineration of all oils and sludges as well as soils with greater than 25 ppm PCBs or 500 ppm total halogenated organics. The remainder of soil excavated from the tank and pit areas would be landfilled off-site at a RCRA licensed hazardous waste facility along with all dismantled tanks. All wastewaters, decontamination water, and scrubber water would be treated at an off-site treatment facility. The excavated areas would be backfilled with on-site soils and graded to preclude ponding.

This alternative would not require any long term maintenance or monitoring at the site. The most highly contaminated source material would be permanently treated. However, the soils that would be landfilled, which comprise roughly one half of the source material, would not be treated. The off-site disposal of waste without treatment is the least favored option under SARA. The cost of Alternative 5 is $5.8 million.

With the exception of no action (Alternative 1), all of the alternatives would effectively and permanently minimize the danger to the public health and the environment at the site area through the removal of the contaminated material.

The use of an off-site landfill (Alternative 2 and 5) is conventional, easy to implement, and transfers the operation and maintenance to the owner/operator of the landfill. The most significant disadvantage of this option is that it does not treat the contaminants, so there is no reduction in toxicity, volume, or mobility. It also may be difficult to maintain the long term integrity of hazardous waste landfills as required by the U.S.EPA's off-site policy. The off-site disposal of contaminated materials without treatment is the least preferred option under SARA.

The off-site incineration of the source materials (Alternative 4) offers the advantage of permanently destroying the contaminants in the waste material and the soils. It is a proven technology that transfers operation and maintenance to the owner/ operator of the incinerator facility. One the most significant disadvantage of this alternative is implementability. The material must be packaged in small fiber drums for transportation. The facilities available have commitments to their regular clients which control when and at what rates the source material can be taken care of. In addition, a number of off-site hazardous waste incinerators have shown a reluctance to accept the waste material due to the high levels of lead found in some of the sludges. Transportation of the waste to an off-site facility increases both the cost of this alternative and the risks posed to the public by movement of contaminated materials on the highways.

As with off-site incineration, on-site incineration (Alternative 3 and 5) would utilize a proven technology to permanently destroy the contaminants in the source material. The advantages of this alternative are that the packaging requirements necessary for off-site incineration would be avoided, and all material could be processed in one year or less once the incinerator begins operation. This alternative also meets the goal of SARA of implementing a remedial action which incorporates treatment rather than land disposal where practicable.

A comparison of the alternatives on the basis of protectivness of public health and the environment shows that on-site and off-site incineration provide a high level of protection. Alternatives which use a high degree of landfilling provide an equal level of protection in the short run. The long run dependability of landfills, however, are unknown. There would be no beneficial impacts associated with the no action alternative.

Any detrimental environmental effects associated with the waste and soil removal operations would essentially be the same for each alternative except the no action alternative. These short term negative impacts could be minimized using proper construction methods.

The State of Ohio and the U.S.EPA expressed preference for remedial actions that would provide destruction of hazardous constituents in lieu of transporting untreated wastes to a RCRA approved location. Section 121(b)(1) of SARA states "Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants, and contaminants is a principal element, are to be preferred over remedial actions not involving such treatment. The offsite transport and disposal of hazardous substances or contaminated materials without such treatment should be the least favored alternative remedial action where practicable treatment technologies are available."

Thus, the U.S.EPA emphasizes the need to consider treatment, recycling and reuse before off-site land disposal of hazardous substances from CERCLA sites is used. In addition, Section 300.68(a)(1) of the NCP provides that remedial alternatives should not be eliminated on the basis of cost alone. Therefore, other long term benefits should be analyzed when comparing alternatives.

Environmental benifits which would accrue as a result of selecting an incineration option over a land disposal option are:

1) permanent destruction of the PCBs, PAHs, VOCs, and other organics found in the source material.

2) elimination of the risk of release of hazardous substances to the environment and reduction of the health risk associated with this exposure, and

3) elimination of the need for governmental authorities to perform the environmental monitoring at the site would be necessary if the wastes were left on site or relocated to another site.

CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

The technical aspects of the remedial alternative implemented at the Laskin/Poplar Oil site will be consistent with all federal and state applicable or relavent and appropriate requirements (ARARs). Other environmental laws which may be considered ARARs to the remedial alternatives evaluated are the Resource Conservation and Recovery Act (RCRA), the Toxic Substance Control Act (TSCA), the Clean Air Act. Chapters 3704 and 3734 of the Ohio Revised Code (ORC), and Section 3745-15, 17, and 18 and 21 as well as Section 3745 - 50 through 3754 - 69 of the Ohio Administrative Code.

The specific provisions of RCRA which may serve as ARARs for the alternative chosen include the thermal destruction requirements (40 CFR Subpart P, Section 265.370 through 265.383), the incinerator requirements (40 CFR Subpart O, Section 265.340 through 265.369). These provisions list the proceedures and requirements which must be complied with during the thermal destruction of the waste material. These reqirements are also included in OAC rules 3745-57-40 to 3745-57-99 and OAC rule 3745-50-62. The off-site wastewater treatment requirements (40 CFR Parts 262 and 263) could also be considered an ARAR.

The selected remedy involves placement and treatment of soils and debris wastes. Placement of wastes or treated residuals is prohibited under RCRA Land Disposal Restrictions (LDR) unless certain treatment standards are met. LDR standards have not been published for soil and debris wastes, but when published, the standards may be applicable or relevant and appropriate. Despite the absence of specific treatment standards, the treatment method employed as part of this remedial action satisfies the statutory requirement to, "...substantially diminish the toxicity of

the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized." [sec. 3004 (m) R.C.R.A.]

Emissions from the incinerator would be covered under the Clean Air Act, ORC Chapter 3704, and OAC Sections 3745-15, 17, 18, and 21. Off-site transportation of hazardous waste is covered under OAC 3745-63-11. This requires the transporters of hazardous waste to register with the Public Utilities Commission of Ohio and to obtain Ohio transporter registration numbers. These requirements will be met during the remedial action. ARARs will only be waived under the conditions set forth in Section 121(d)(4) of SARA. This action is considered an interim measure. Therefore, no final cleanup levels have been determined. The final cleanup levels will be determined at the completion of the overall site RI/FS.

RECOMMENDED ALTERNATIVE

It is recommended that Alternative 3 be selected. This alternative consists of the following:

- Construction of a fence around the contaminated portions of the site and the on-site incinerator
- On-site incineration of oils, sludges, and "source" soils
- Off-site treatment of all wastewaters, decontamination water, and scrubber water
- Off-site disposal of all incinerator ash
- Dismantling and off-site disposal of all tanks
- Crushing and incineration of the cinder block walls of the pits
- Backfilling and/or grading of all excavated areas to preclude ponding

Based on the comparison of alternatives, the recommended alternative is fully protective of public health and the environment, cost effective, utilizes treatment technology to the maximum extent practicable, and will meet all applicable, or relevant and appropriate federal and state requirements. It has an estimated cost of $8.5 million.

DESCRIPTION OF RECOMMENDED ALTERNATIVE

At the inception of the remedial action, the site would be fenced to reduce access to the contamination on site and the equipment used for the remedial action. Site access would only be granted on an as needed basis.

On-site mobile incinerators are a proven and available technology. Based on vendor information, both infrared and rotary kiln mobile incinerators

would be capable of achieving the 99.9999% destruction efficiencies required for PCB wastes. Both units have air scrubber systems capable of effectively removing air emission constituents to the levels needed to meet all federal and state ARARs. Air emission levels would be specified during the remedial design process. The attainment of these levels would be required.

The soils could be used to condition the sludges to aid in material handling. The oils found on site could be used as a supplemental fuel source for the sludges and soils. The cinder block walls of the pits would be crushed and combined with the oils, sludges, and soils to be burned.

All ash generated during the incineration process would be tested to determine the appropriate method of off-site disposal. If the test results indicate that the ash should be classified as a hazardous waste, it would be sent off-site to a RCRA licensed landfill for disposal. The transportation of the ash would be conducted by a company experienced in hazardous waste handling. The company would be required to have all necessary permits, manifests, and insurance. If the ash can be delisted, it could be sent to a sanitary landfill.

Off-site wastewater treatment is technically feasible and has been used for earlier wastewater removed from the site. All decontamination water and scrubber water would be disposed of in a similar fasion. An experienced hazardous waste hauler would be used to transport the waters.

After all waste has been removed from the tanks, the tanks will be dismantled for transportation and disposal at an off-site RCRA facility. The exact method of dismantling could include flame, hydraulic, or other technique that could be safely carried out on site. The choice of demolition method will be made during remedial design activities, or during the removal operation, based on site conditions.

All areas which have been excavated will be backfilled with on-site soils and/or graded to preclude ponding. Site runoff from the area will be directed to the existing retention pond.

The source removal is intended solely as an interim measure. The cleanup levels used will not necessarily be the final remediation level for the site. The final levels will be determined during the overall site RI/FS. All attempts have been made to keep the remediation efforts associated with this operable unit consistent with the final remedy to the extent that it can be anticipated.

The intent of this operable unit is to remove the the source material still present on the Laskin/Poplar Oil site. To be consistent with the intent, the operable unit must deal with the soils which have become significantly contaminated due to the bulk movement of the oils and sludges. Therefore, the soils surronding the pits and in the tank area will be

removed until the remaining soils are visibly clean. The remaining soils will be sampled and analyzed for the full hazardous substance list prior to backfilling and grading. This will aid in the overall site cleanup.

The following is a cost estimate for the recommended alternative.

Site preparation, mobilization, demobilization and permiting	$1,500,000	
Conditioning and incineration of wastes and soils	$4,377,500	@ $500/ton
Transportation of 4340 tons of ash to the landfill	$244,125	20 tons/load 300 miles @ $3.75/mi.
Disposal cost for 4340 tons of ash	$651,000	4340 tons @ $150/ton
Transportation and disposal of scrubber and decon. water	$350,200	875,500 gal. @ $0.40/gal
Tank cutting and decontamination	$200,000	
Transportation of 245 tons of dismantled tanks	$ 13,785	20 tons/load 300 miles @ $3.75/mi.
Landfill costs for 245 tons	$ 36,750	245 tons @ $150/ton
Pit backfilling and grading	$ 10,000	
Indirect costs including engineering [redacted] and contingencies	$1,107,505	15% Of all costs
Total	$8,490,865	

OPERATION AND MAINTENANCE

The preferred alternative will require operation and maintenance costs associated with the start-up (including the trial burn) and the operation

of the mobile incinerator. These costs would be limited to the period of time when the incinerator would be operating, which has been estimated to be approximately one year and is included in the cost estimate. There is no long term operation or maintenance associated with this alternative. No long term monitoring will be required.

SCHEDULE

The following schedule of activities povides projected milestones for the work to be performed at the Laskin/Poplar Oil site.

Approve Remedial Action (ROD)	September 1987
Design Award (Notice to Proceed)	January 1988
Design Completion	April 1988
Award Contract	July 1988
Begin Remedial Action	September 1988
Complete Remedial Action	September 1989

FUTURE ACTIONS

A work plan was completed in August 1987 for Phase II of the RI for the site. A ROD for the overall site cleanup is scheduled for September 1988. The overall site RI/FS will deal with groundwater, dioxin, and overall soil contamination.

OhioEPA

State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

Toward A Cleaner Environment

Richard F. Celeste
Governor

September 28, 1987

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OCT 0 1 1987

U.S. EPA REGION 5
OFFICE OF THE REGIONAL ADMINISTRATOR

Mr. Valdas V. Adamkus
Regional Administrator
U.S. EPA, Region V
230 South Dearborn Street
Chicago Illinois 60604

Dear Mr. Adamkus:

After review of the Phased Feasibility Study for Source Material Removal for the Laskin/Poplar Oil Superfund site and the draft Record of Decision for this remedial action, Ohio EPA concurs with the proposed remedial alternative. This alternative includes:

- construction of a fence around the contaminated portions of the site and the on-site incinerator;
- on-site incineration of oils, sludges and "source soils";
- off-site treatment of all wastewaters, decontaminated water, and scrubber water;
- off-site disposal of all incinerator ash;
- dismantling and off-site disposal of all tanks;
- crushing and incineration of the cinder block walls of the pits;
- and backfilling and grading of all excavated areas.

Estimated cost of $8.5 million.

Ohio will assure payment of 10 per centum of the remedial action. There is no operation and maintenance required for this action.

Sincerely,

Richard L. Shank, Ph.D.
Director

O. WMD
CC: RF
RA
FREEMAN ✓

RLS/RH/lz

cc: David Strayer, CAS, OSHA
Rodney Beals, NEDO
Dale Vitale AGO

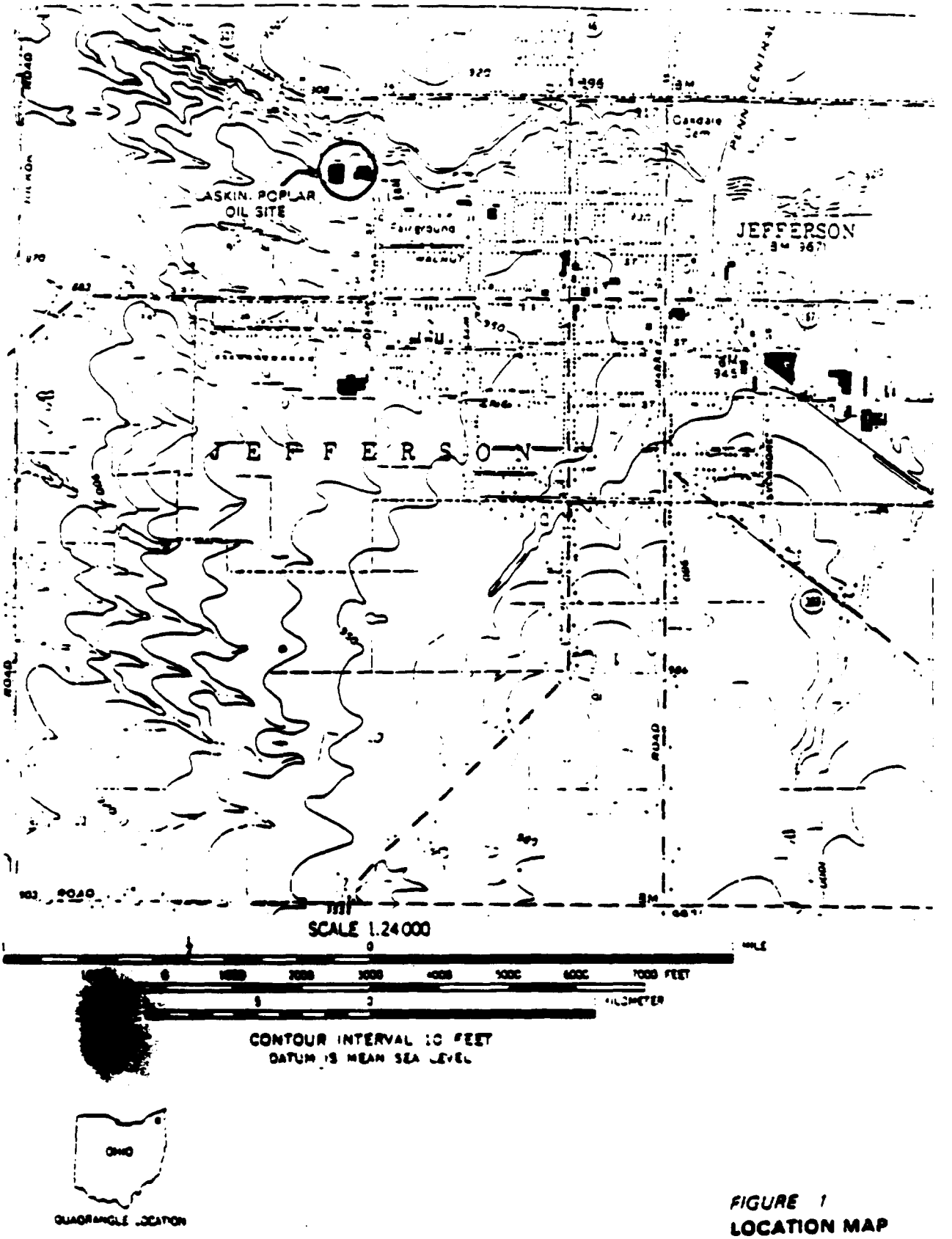

FIGURE 1
LOCATION MAP
LASKIN/POPLAR OIL

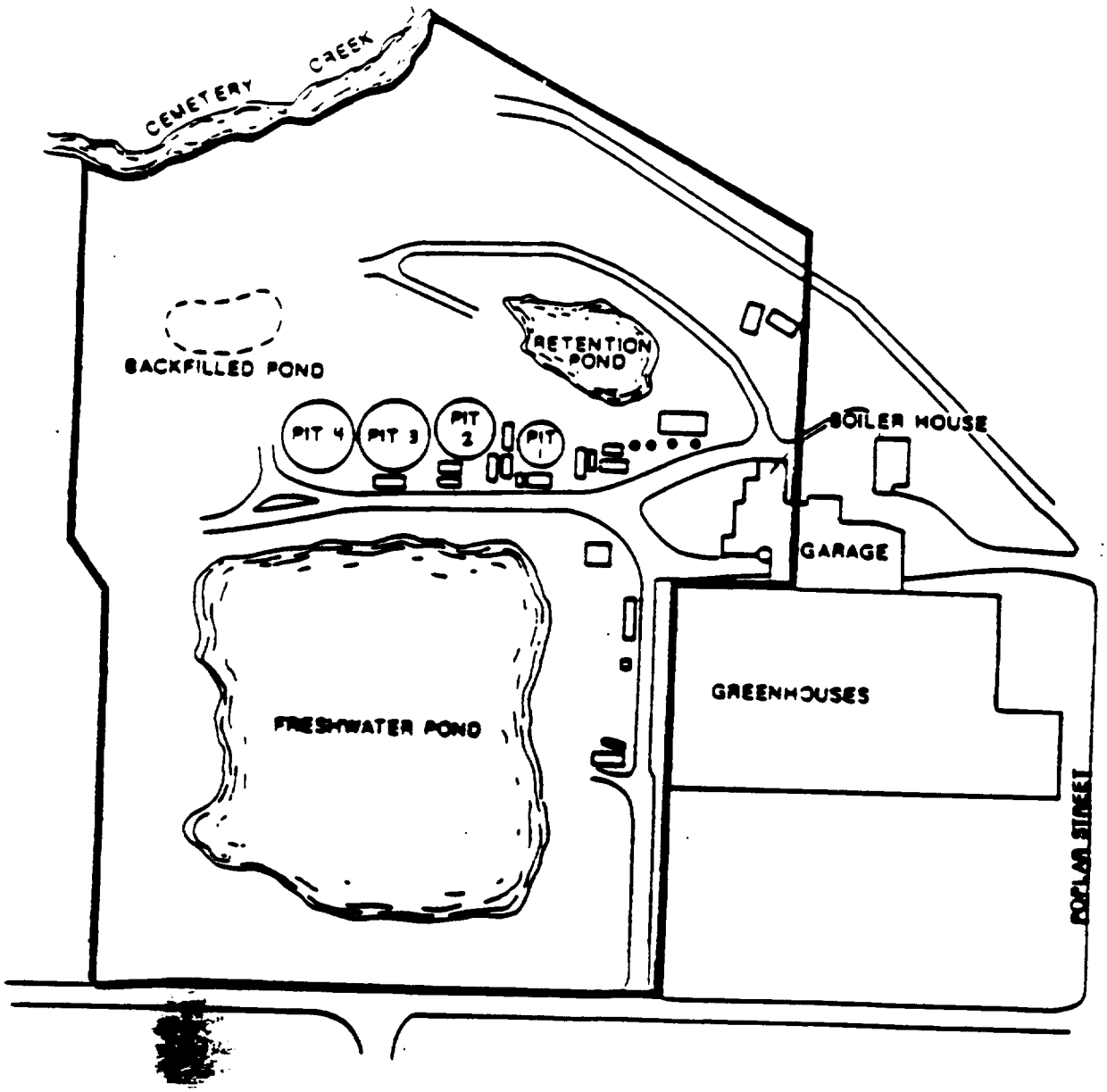

FIGURE 2
SITE MAP
LASKIN/POPLAR OIL

TABLE 1

ANALYSIS OF WASTES

	Ranges of Contaminants		
	Oils	Wastewaters	Sludges
METALS (ppm)			
Aluminum		0.04-4.37	28-14,600
Antimony		0.0-0.2	0.0-13
Arsenic		0.0-0.75	0.0-15
Barium	2.0-34	0.021-0.7	6.1-1,270
Chromium	0.0-8.5	0.0-0.074	10-3,420
Copper	0.0-13	0.0-0.224	25-598
Iron	25-295	0.227-74.9	28-4,720
Lead	30-543	0.004-0.62	69-12,400
Magnesium	<20	0.08-47.2	0.0-9,040
Manganese	1.9-8.4	0.014-7.22	0.0-375
Mercury	0.0-0.24	0.0-0.0003	0.0-18
Nickel		0.0-0.291	0.0-82
Zinc	9.0-290	0.267-15.9	18-5,060
Cyanide		0.0-0.03	0.0-5
PCBs (ppm)			
Aroclor 1221		0.0-0.054	
Aroclor 1242 and/or 1016	10-22	0.0-0.024	0.0-94
Aroclor 1254	41-144	41-0.15	0.0-170
Aroclor 1260	0.0-12		
VOLITILE ORGANICS (ppm)			
Methylene Chloride		0.0-2.4	0.0-3,800
Acetone		0.25-46	0.0-97,000
1,1-Dichloroethene			0.0-1.7
1,1-Dichloroethane		0.0-0.12	0.0-5.3
Chloroform		0.0-1.2	0.0-5,100
1,2-Dichloroethane		0.0-0.36	0.0-6,400
2-Butanone		0.0-18	0.0-19,000
1,1,1-Trichloroethane		0.0-0.27	0.0-21,000
Tri[redacted]ethene		0.0-0.04	0.0-1,200
B[redacted]		0.0-0.46	0.0-280
4-[redacted]-Pentanone		0.0-3.8	0.0-7,400
Te[redacted]roethene		0.0-0.01	0.0-750
To[redacted]		0.0-7.4	22-76,000
Chlorobenzene			0.0-2
Ethylbenzene		0.0-14	14-44,000
Total Xylenes		0.0-3.4	49-140,000
Vinal Acetate			0.0-10

TABLE 1
(cont.)

ANALYSIS OF WASTES

	Ranges of Contaminants	
	Wastewaters	Sludges
BASE/NEUTRALS (ppm)		
1,3-Dichlorobenzene		0.0-120
1,2-Dichlorobenzene		0.0-62
Nitrobenzene	0.0-2.2	
Isophorone	0.0-17	0.0-15,000
1,2,3-Trichlorobenzene		0.0-130
Napnthalene	1.3-15	0.0-34,000
2-Methylnaphthalene	0.45-45	96-5,800
Acenaphthalene	0.0-6.5	0.0-1,000
Acenaphthene	0.11-34	50-6,600
Dibenzofuran	0.25-30	0.0-3,600
Fluorene	0.0-30	0.0-5,000
4-Nitroaniline	0.0-5	
n-Nitrosodiphenylamine	0.0-26	0.0-1,500
Phenanthrene	0.62-97	0.0-12,000
Anthracene	0.14-17	0.0-9,000
di-n-Butyl Phthalate	0.0-2.7	0.0-62
Fluoranthene	0.22-30	0.0-5,300
Pyrene	0.18-35	0.0-5,200
Butylbenzylphthalate	0.0-0.033	0.0-290
Benzo (A) Anthracene	0.0-8.5	0.0-1,400
bis(2-ethylhexyl) Phthalate	0.0-8.5	0.0-370
Chrysene	0.0-51	0.0-1,500
Di-N-Octyl Phthalate		0.0-1,000
Benzo (B) Fluoranthene	0.0-6.2	0.0-95
Benzo (A) Pyrene	0.0-0.44	
Indeno(1,2,3-c,d) Pyrene		0.0-330
Benzo (g,h,i) Pyrene		0.0-350
ACID EXTRACTABLES (ppm)		
Phenol	1.7-53	0.0-34,000
2-Methylphenol	0.0-34	0.0-8,500
4-Methylphenol	0.0-9.5	0.0-22,000
2,4-Dimethylphenol	0.0-16	0.0-2,700
4-Chloro-3-Methylphenol		0.0-140

[redacted]

Table 2

ALTERNATIVES EVALUATION SUMMARY MATRIX

	No Action	Off-site Containment	On-site Incineration	Off-site Incineration	On-site Incineration Off-site Containment
ORDER OF MAGNITUDE COSTS	$0	$4,199,885	$8,498,865	$12,141,355	$5,724,418
TECHNICAL CRITERIA Feasibility	Not Applicable	• Alternatives Commercially available • Land Disposal Restriction deadline 11/8/88	• Alternative is commercially available	• Alternative is commercially available	• Alternatives commercially available
Implementability	Not Applicable				
PUBLIC HEALTH AND ENVIRONMENTAL CRITERIA	- Potential for chemical migration likely	• Wastes not treated Long-term dependability of landfill unknown	• All wastes permanently treated	• All wastes treated permanently treated	• Over half the wastes untreated Long term dependability of landfill unknown
LEGAL OR INSTITUTIONAL CRITERIA	- No treatment is involved	- No treatment is involved This is the least favored option under SARA	• Treatment is used to the greatest extent practicable	• Treatment is used to the greatest extent possible	• less than half of the waste is treated. Landfilling without treatment is the least favored under SARA.

LASKIN/POPLAR OIL SITE
JEFFERSON OHIO

RESPONSIVENESS SUMMARY

The United States Environmental Protection Agency (U.S. EPA) recently held a public comment period from August 10, 1987 to September 11, 1987 for interested parties to comment on U.S. EPA's August 1987 Phased Feasibility Study (PFS) and Proposed Plan for a source removal operable unit at the Laskin/Poplar Oil site. At the time of the public comment period, U.S. EPA had announced its recommended alternative for the removal of the source material.

The purpose of this responsiveness summary is to document U.S. EPA's responses to comments received during the public comment period. All of the comments summarized in this document will be factored into U.S. EPA's final decision. Since the purpose of this comment period was to receive comments specifically related to the PFS, comments related to the overall Remedial Investigation/ Feasibility Study (RI/FS) or the Superfund program as a whole will be addressed at a later time. A number of comments were received well after the closing date of the public comment period. U.S. EPA has not responded to those comments, except to the extent that many of the same comments were made in timely submissions.

This responsiveness summary is divided into the following sections:

I. Responsiveness Summary Overview - This section briefly outlines the proposed remedial alternatives as presented in the PFS including the recommended alternative.

II. Summary of Public Comments and U.S. EPA Responses - This section summarizes both written and oral comments received from the community and the local officials and the U.S. EPA's responses. The comments are organized by subject area.

III. Summary of Potential Responsible Party (PRP) Comments and U.S. EPA Responses - This section summarizes both written comments received from the PRPs and the U.S. EPA responses. The comments are organized by subject area.

I. RESPONSIVENESS SUMMARY OVERVIEW

A. Proposed Alternatives and Recommended Alternative

The FFS identifies and evaluates alternate source control options. The alternatives range from no action to complete and permanent treatment. The alternatves were screened and evaluated based on their technical feasibility, implementability.

Five alternatives passed the initial screening and were compared in detail. The five alternate included:

1. No action;
2. Off-site Containment;
3. On-site Incineration;
4. Off-site Incineration;
5. On-site Incineration/Off-site Containment.

These five alternatives were then subjected to a detailed evaluation of their effectiveness, compliance with the Superfund Amendments and Reauthorization Act, and cost effectiveness. The U.S. EPA's recommended alternative is the on-site incineration of all source material on the site. Groundwater, soil, and dioxin contamination will be covered in the overall RI/FS for the site.

B. Public Comments on the Remedial Alternatives

Public comments were received from the Village of Jefferson trustees, the Ohio Environmental Council, and citizens of Jefferson.

C. PRP Comments on the Remedial Alternatives

The following entities submitted comments on behalf of the PRPs:

- Baker & Hostetler, Counsellors at Law, on behalf of Browning-Ferris Industries of Ohio, Inc., General Motors Corporation; TRW Inc., Rockwell International Corporation; Koppers Company, Inc., and Be-Kan, Inc.
- Squire, Sanders, & Dempsey, Counsellors at Law, on behalf of Ashland Oil, Inc., Cleveland Electric Illuminating Company, Consolidated Rail Corporation, White Consolidated Industries,

Shell Oil Company, Mobil Oil Company, Sun Refining and Marketing Company, Inc., Matlack, Inc., Anchor Motor Freight, Inc. and Eliskim, Inc.

- Freedman, Levy, Kroll & Simonds, Counsellors at Law on behalf of Perfection Corporation.

- Keystone Environmental Resources, Inc on behalf of Be-Kan, Inc., Browning-Ferris Industries of Ohio, Inc., General Motors Company, Koppers Company, Inc., Rockwell International, Inc., and TRW, Inc.

II. SUMMARY OF PUBLIC COMMENTS AND U.S. EPA RESPONSES

This responsiveness summary addresses both oral and written comments received by U.S. EPA concening the Phased Feasibility Study (PFS) for the Laskin/Poplar Oil site. The comment period was held from August 10, 1987, to September 11, 1987. A public meeting was held on August 26, 1987, at the Ashtabula County Courthouse, as an oppurtunity for the public and other interested parties to present oral and written comments to the U.S. EPA. These comments are recorded in a transcript of the meeting which is available at the Information Repositories in Ashtabula and Jefferson, Ohio, and the U.S. EPA Region V office in Chicago. The written and oral comments are summarized and organized into the following categories:

A) The remedial alternative;

B) Additional site work; and

C) General.

A. Remedial Alternative

- A number of the comments received from the village trustees and the community supported the U.S. EPA's recommendation of an on-site mobile incinerator.

EPA's Response:

U.S. EPA is pleased that the community and local officials support the recommended alternative.

- A number of the comments expressed a concern regarding site security and access.

U.S. EPA's Response:

Areas of the site which are known to be contaminated are currently enclosed in a property fence. As an initial step of this proposed remedial action a chain link fence will be constructed. The exact extent of the fencing will be determined once initial sample results are received from the Phase II RI for the overall site and the incinerator location is chosen. Site access during the remedial action will be on an as needed basis only.

- One commentor wanted to know what equipment would be removed.

U.S. EPA Response:

This remedial action will result in the removal of the tanks and pits. At the end of the action, the mobile incinerator will be removed. The boiler stack, boilers, and other site features will be dealt with in the overall RI/FS.

3. Additional Site Work

- One commentor was concerned that dioxin was not mentioned in the PFS.

U.S. EPA Response:

Dioxin is not present in the areas covered by this action and so was not mentioned. Dioxin contamination is being considered in the overall site RI/FS.

C. General

- A number of commentors stated that local contractors should be used as much as possible.

[redacted] Response:

[redacted] work is to be performed by the U.S.EPA, selection of the con- [redacted] will be in accordance with applicable federal regulations. [redacted]ore, bids will be solicited in a manner which will allow all qualified contractors capable of performing the work to bid on the project. Out of town contractors often rely on local contractors for many of the tasks. Information on becoming involved in CERCLA actions was given to Michael Wheeler of the Ashtabula County Disaster Services.

- A commentor felt that the public should be kept informed of EPA's schedule of activities.

U.S. EPA Response:

The U.S. EPA agrees. The community relations department has made a commitment to keeep the public abreast of U.S. EPA actions.

III. SUMMARY OF PRP COMMENTS AND U.S. EPA RESPONSES

This responsiveness summary addresses the written comments submitted by or on behalf of the PRPs. The comment period was held from August 10, 1987, to September 11, 1987. A copy of the comments submitted are available in the Information Repositories in Ashtabula and Jefferson, Ohio and the U.S. EPA Region V Office in Chicago. The comments are organized into the following categories: A) EPA Authority, B) Remedial Alternatives, C) Time Limits, D) Funding, and E) General. The U.S. EPA responses are provided for each comment, or set of like comments.

A. EPA Authority

Commentors felt the U.S. EPA lacks the authority to perform the remedial action. The specific comments are listed below.

Comment:

- The U.S. EPA lacks authority to perform the Phased Feasibility Study and to take the proposed remedial action, due to the 1 year, $2 million limits set forth in Section 104 of CERCLA.

U.S. EPA's Response:

The 1 year, $2 million limits set forth in section 104 of CERCLA apply to emergency response action, not to remedial actions. The Phased Feasibility Study and the subsequent remedial action are not being performed under the emergency response authority, but under the [redacted]dial authority.

[redacted]nt:

- Under the Superfund Act, U.S. EPA may only perform remedial actions at the Laskin/Poplar Oil site if that action is necessary as a result of a release or threatened release of hazardous substances from the

site. Section 101(14) of Superfund states:

> "The term [hazardous substance] does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)."

The issue is also discussed in the U.S. EPA General Counsel Memorandum, July 31, 1987. The PRPs feel the oil excusion implies the oil part of the waste material cannot be dealt with in the operable unit.

U.S. EPA Response:

The July 31, 1987 General Counsel discussion of the CERCLA Petroleum Exclusion set forth in Sections 101(14) and 104 (a)(2), referred to by the commentor, specifically states on pg. 8:

> " However, it was clear that the omission of oil coverage was intended to include spills of oil only, and there was no intent to exclude from the bill mixtures of oil and hazardous substances."

The memorandum continued on pg. 10:

> " In fact, one of the petroleum-hazardous substances mixtures most often mentioned during the debates was that of PCB contaminated oil which is a type of contamination arguably resulting from the "normal use" of the oil in transformers. Accordingly, an interpretation of the petroleum exclusion which includes as "petroleum" hazardous substances added during use of the petroleum would not be consistent with Congressional intent."

The situation at the site clearly falls within the authority of Superfund. The oils on site are mixed with a variety of volatile organic compounds, PCBs, and metals, and creosote wastes which are all listed as hazardous substances under Superfund. Creosote wastes, which are derivatives of wood and coal tars, not petroleum products, are a source of polynuclear aromatic hydrocarbons (PAHs), which are also classified [redacted]ardous substances.

8. [redacted]al Alternatives

A number of comments were received questioning the U.S. EPA's choice of cleanup levels. These comments dealt with the reasoning behind the U.S.EPA's choice of cleanup levels and the consistency of the cleanup levels with the final remedy. Based on these comments, the U.S.EPA has

reconsidered the chosen cleanup levels. Based on the intent of the operable unit, to remove the source material found on site, and the desire to be consistent with the overall site remedy, the U.S.EPA has modified its cleanup level. The new cleanup level will require the removal of soils from around the pits and in the tank area until the remaining soils are visibly clean. This cleanup level is consistent with the intent of the operable unit and minimizes the likelihood that soils will be removed past the levels which will be determined in the overall site RI/FS. The specific comments made on behalf of the PRPs are discussed below.

Comment:

- The 5 ppm PCB cleanup level is inconsistent with the "National TSCA Policy". The national policy should govern the cleanup level at CERCLA sites. There is no reference to "Regional Policy" in Section 121 of CERCLA.

U.S. EPA's Response:

As mentioned earlier, the U.S. EPA will not be using the 5 ppm PCB action level for this operable unit. The soil shall be removed until it is visibly clean. Therefore, the issue is moot.

The regional policy approach, however, is fully consistent with and supported in the National TSCA Policy referenced. The national policy states in 40 CFR Part 761, pg. 10689:

> "Therefore, spills which occurred before the effective date of this policy are to be decontaminated to requirements established at the discretion of EPA, usually through its regional offices."

Just as importantly, the TSCA policy does not supercede CERCLA policy. The TSCA rule specifically states on pg. 10690:

> " However, other statutes require the agency to consider different or alternative factors in determining appropriate corrective actions."

[redacted]icy continues:

> " Thus, cleanups under other statutes, such as RCRA corrective actions or remedial or emergency response actions under SARA, may result in different outcomes."

Comment:

- The draft is totally lacking in any explanation of why the Region is assuming that Laskin site must be considered a "residential area". Why can this not be considered a "restricted area", where National Policy allows much higher levels?

U.S. EPA's Response:

The site is considered a residential area for three reasons. First the site owner/operator has his residence on the property. Second, National Policy defines residential/commercial areas as areas where people live or reside or where people work in other than manufacturing or farming industries. It also specifically includes playgrounds and parks. Areas which are less than .1 km from a residential/commercial area are considered as such even where access is restricted. Immediately across the street from the Laskin property is the Ashtabula County Fairgrounds and a set of softball fields. On the property itself there is a freshwater pond which people fish. Third, under current zoning, the property can be developed residential.

Comment:

- Why has the Region not considered the idea of covering the area with 10 inches of clean soil, which would allow for higher levels even in residential areas?

U.S. EPA's Response:

The use of a 10 inch soil cover was not considered by the Region because the operable unit is only an interim remedy. Since contaminated soils will remain onsite, the possibility exists for the clean soil to become contaminated or to be mixed with contaminated soil if further soil remediation is required. This could result in a larger volume of soil requiring further remediation and would not be cost effective. Also, the addition of soil would not do anything to prevent further contamination of the groundwater.

[redacted]:

[redacted] removal should be left until overall site cleanup levels are [redacted]tished. This is necessary to assure that the remedial action is cost effective and consistant with the rest of the site.

U.S. EPA Response:

As documented in the endangerment assessment included in the feasibility study, the sludges and oils contain hazardous suostances at levels above

current health based standards.

It is the U.S. EPA's feeling, due to the fact that the pit bottoms are unlined, that the oils and sludges in the pits have been in direct contact with some soils. These soils are saturated with the contaminants and therefore can be considered source material. Leaving these soils on site would not be appropriate in terms of protectiveness to public health and the environment, would not be consistent with the intent of the remedial action, and would significantly increase the chances that a mobile incinerator would need to be returned to the site. This remobilization would be costly.

We understand the PRPs concern regarding unnecessary work during this remedial action and have reviewed the cleanup criteria to be used. Based on this review, the U.S. EPA has chosen a cleanup approach which it feels is consistent with the intention of removing the source material, protective of public health and will minimize the chance of removing material beyond final cleanup levels.

The chosen cleanup level requires that all soils around the pits and in the tank area which are visibly contaminated will be removed. The fact that the soils are visibly contaminated indicates that bulk movement of the source material has occurred. It would not be reasonable to leave these soils until the completion of the final RI/FS.

The commentors also felt that the Land Disposal Regulations had been misinterpreted. They felt that they would not apply to the conditions at the site. The comments are presented below:

Comment:

- Leache concentrations based on the Toxicity Characteristic Leaching Procedure (TCLP) should be used in determining whether or not land disposal restrictions apply. This is based on the land ban "correction" notice of June 4, 1987. The PFS bases its conclusions on actual waste concentrations.

U.S. EPA's Response:

[redacted] leachate concentrations based on the TCLP was implicitly stated in [redacted]ber 7, 1986 Land Disposal Restrictions and later explicitly [redacted]n the the June 4, 1987 corrections. The leachate concentrations [redacted]y to the solvent wastes F001-F005 which the PFS states some of the wastes could be considered. The levels in the sludges are such that the U.S. EPA feels they would have leachate concentrations above the limit. The levels are presented below.

Contaminant	Maximum Concentration Found	Allowable Leach
Methylene Chloride	3,300 ppm	.36 ppm
Acetone	97,000 ppm	.59 ppm
1,1,1-Trichloroethane	21,000 ppm	.41 ppm
Trichloroethene	1,200 ppm	.091 ppm
Tetrachloroethene	750 ppm	.05 ppm
Toluene	76,000 ppm	.33 ppm
Xylene	140,000 ppm	.15 ppm
Ethylbenzene	44,000 ppm	.053 ppm

In addition, liquid, PCB containing wastes are covered under the California List when they are contained in wastes which are listed as hazardous under 40 CFR Part 261, or if the mixture exhibits one or more of the characteristics of hazardous waste identified in that Part. PCBs are banned from land disposal if the total waste concentration (not an extract or filtrate) exceeds 50 ppm PCBs.

Wastes containing halogenated organic compounds (HOCs) are subject to the California List prohibitions if the waste is listed as a hazardous waste under 40 CFR Part 261, or exhibits one or more characteristics of hazardous waste identified in that Part. The land disposal prohibition applies to hazardous wastes containing HOCs in total concentrations greater than 100 mg/l (liquids) or 100 mg/kg (non-liquids). This is based on total waste concentration (not an extract or filtrate).

Comment:

- Is the Regions interpretation that the land ban would be triggered at the Laskin/Poplar Oil site consistent with Headquarters policy?

U.S. EPA Response:

The current interpretation in Headquarters regarding what triggers the Land Disposal Restrictions is that when the wastes are removed from their present location for treatment or disposal the Land Disposal Restrictions are triggered. On-site containment of the wastes would [redacted] the removal of the liquids and sludges for solidification, thus [redacted]ring the restrictions.

[redacted] on the Land Disposal Restriction, certain treatment standards must be met. The treatment standards for liquid PCB wastes, with greater than 50 ppm PCBs, specifies thermal destruction. The treatment standard for Halogenated Organic Compound (HOC) wastes, with greater the 1000 ppm HOCs, specifies incineration.

The applicability of the Land Disposal Restrictions is seperate from the placement issue which triggers the Minimum Technology Requirements

for a disposal unit. These requirements are triggered when an existing unit is expanded or a new unit is created. Under Headquarters policy, the definition of what is a unit can be expanded when the contamination is not centered in "hot spots" but is more general and uniform across a large site. This is not the case at the Laskin/Poplar Oil Site. The source material areas are distinct units. Therefore, the combination of all of the wastes into one containment area would trigger the Minimum Technology Requirements, which include a double liner and a double leachate collection system.

Comment:

- Based on the soils data collected in fulfillment of the consent order, PCB and HOC concentrations do not exceed land based limits.

U.S. EPA's Response:

It is correct that the soil samples taken from four to six feet from the pits had levels below the Land Disposal Restrictions limit. In addition, Land Disposal Restriction standards have not been promulgated for soil and debris wastes at this time. When these standards are published, they may be considered applicable or relevent and appropriate.

Some of the sludges, however, exceed the Land Disposal Restriction. This means some form of treatment is required for these materials. The soils immediately surrounding these sludges are believed to contain similar contaminant levels. The U.S. EPA, therefore, believes it is prudent and reasonable to treat these soils.

The commentors felt that the whole concept of an operable unit was not supported for this site. Their reasons are as follows:

Comment:

- Both the U.S. EPA and private parties have taken emergency actions that were necessary to remove the most imminent hazardous wastes at the site. There is no authority under the Superfund Act for the agency to fractionalize response actions at a site in a manner that is wasteful, duplicative and inefficient.

[redacted]PA's Response:

[redacted]. EPA would like to clarify the difference between emergency [redacted] and remedial actions. The emergency actions were taken to to prevent imminent threats to public health and the environment. Remedial actions are used in removing threats to public health and the environment which do not require immediate action. This does not mean that the remedial actions can and should be put off for long periods of time, but that the risk is not considered imminent and does not justify emergency response action.

The source removal operable unit falls under the remedial action category. While there is no immenent risk that requires emergency action, enough information exists to show that releases of contaminants from the pits could and most likely have occurred. It would be inappropriate for the U.S. EPA not to proceed with the operable unit based on the contaminents known to be present and the threat of a release of the contaminants. This approach is consistent with 40 CFR 300.68 (c) of the National Contingency Plan.

Comment:

- The agency cannot support its proposed Remedial Action with an incomplete risk assesment.

U.S. EPA's Response:

It is the U.S. EPA's policy that source control operable units do not require a quantitative risk assessment. As stated in the Guidance on Feasibility Studies Under CERCLA, U.S. EPA, June 1985:

> " At sites where only source control remedial measures are being evaluated, a qualitative assessment of the potential public health threats in the absence of remedial action will generally be conducted."

The U.S. EPA continues to believe a source removal operation at the site is prudent.

The U.S. EPA's authority to break the site into operable units, such as this source removal, is clearly stated in the National Contingency Plan 40 CFR Part 300.68 (c).

> " Response actions may be separated into operable units consistent with achieving a permanent remedy. These operable units may include removal actions pursuant to §300.65(b) or remedial actions involving source controls, and/or management of migration.

The U.S. EPA feels that the operable unit is an efficient and practical method of dealing with complex sites such as the Laskin/Poplar Oil site.

[redacted]mentors had comments regarding the permitting of on-site [redacted]erators at CERCLA site. These comments are listed below.

Comment:

- The Phased Feasibility Study needs to reflect that additional testing (test burn) of the incineration unit will be required to confirm the use of this technology for site remediation.

U.S. EPA's Response:

A test burn for the mobile incineration will be conducted prior to the incineration of any hazardous waste. The test burn will need to document the 99.9999% performance standard is achieved.

Comment:

- The issue of whether or not an on-site mobile incinerator may legally operate on a CERCLA cleanup site without a RCRA permit in any state other than Illinois has not been resolved. The resolution depends on the interpreatation of sections 113(i) and (2)(e) of CERCLA as amended by SARA.

U.S.EPA's Response:

Section 113(i) does not apply to the alternatives chosen. Section 118 was apparently incorporated into SARA in recognition of the fact that the State of Illinois has aggressively pursued its own program for on-site incineration, and has aquired its own mobile incinerator. Section 121 (e)'s general tenor is to insure that the often lengthy permitting process for on-site remedies, that ordinarily would require such permits, not delay the start of remediation. By requiring that such operations nevertheless must meet applicable or relevant and appropriate requirements of law, Congress has ensured that human health and environmental protection issues, otherwise covered by permitting, will be addressed.

The remainder of the comments on the remedial alternative covered a variety of topics and are presented below:

Comment:

- The high lead content of selected sludges makes off-site incineration an impractical and costly alternative.

U.S. EPA's Response:

[redacted] incineration was determined to be the most expensive option. [redacted] EPA agrees that high lead content of some of the sludge could [redacted] in additional costs, and has recommended on-site incineration [redacted] selected remedy.

Comment:

- For all alternatives, consideration needs to be given to air emissions from material handling during the on-site remedial activities.

U.S. EPA's Response:

All of the options have the possibility of air emissions during material handling. Actions, such as conditioning the waste in the pits, will be taken minimize any air releases. Air monitoring will be used to assure that air releases are kept at an acceptable level.

Comment:

- Air quality monitoring and air pollution controls should be added to the cost estimates.

U.S. EPA's Response:

Air pollution control systems are part of the incinerator units and are included in the cost estimates. The cost of monitoring during the test burn and the continuous monitoring of the incinerator during the clean-up is also included. Air quality monitoring would need to be used for each alternative that involved moving or conditioning the waste. This cost would be similar for each alternative and therefore would not effect their relative costs.

Comment:

- On pages 68-71, landfill costs were listed as $3.75/ton, but should be $150/ton.

U.S. EPA's Response:

The U.S. EPA agrees that the wrong price/ton was given. However, the total dollar amount given is correct and the overall estimates do not change.

Comment:

- On page 71 disposal costs for 6,435 tons of soil and ash are $965,250 [redacted] $150/ton. The cost of off-site wastewater treatment is $140,000 [redacted] on 350,000 gal and $.40/gal. The line item for oil was omitted [redacted], 30 tons, $150/ton).

[redacted]A's Response:

The cost breakdown did accidentally merge information from the disposal of soils and ash with information from the disposal of wastewater. The commentor is correct that disposal cost for soils and ash should be $140,000. Oil was included in the 3500 tons of high level waste to be incinerated. The final cost should be $5,714,418 as opposed to $5,724,418.

Comment:

- U.S. EPA has improperly rejected certain remedial alternatives and failed to consider others. The U.S. EPA has failed to perform a complete evaluation of all reasonable alternatives. For example:

a. Could the ash be disposed of on-site?

b. Could the ash be chemically fixated and disposed of on-site?

c. Could the low level source soils be disposed of on-site?

d. Could soil washing be used?

e. How quickly could an on-site disposal unit be constructed?

U.S. EPA's Response:

The U.S. EPA has met its requirements of comparing remedial actions ranging from no action through complete destruction. Some options were ruled out prior to the Phased Feasibility Study because they were known to be inappropriate or infeasible. The U.S. EPA and Ohio EPA have chosen what they consider a reasonable and appropriate solution.

It was determined that an on-site disposal unit for the source removal could not be constructed, filled, and closed by November 1988 based on prior experience with past CERCLA remedial actions. The idea of replacing the clean ash back on site was rejected based on the fear it could be recontaminated, resulting in the extra cost of remediating the material twice. The same would be true for fixating the ash or soils and placing them back on site.

Comment:

- The option to landfill soils and non-pumpable sludge in Pit 4 should remain open based on the potential difficulty to incinerate these materials given low BTU values. The PCB and HOC concentrations are below land ban limits.

U.S. EPA's Response:

[redacted] supplemental fuel will need to be added, the U.S. EPA expects no [redacted]ulty in incinerating the soils and non-pumpable sludge in Pit 4. [redacted] are routinely incinerated in PCB cleanups. The PAHs and VOCs are [redacted] effectively treated by incineration. The issue is not the combustibility of the soil but the destructability of the hazardous constituents present.

Comment:

- Given the high ash content (30%), a large volume will remain after incineration which would be landfilled off site as a hazardous waste. The cost for landfilling the unpumpable sludge in Pit #4 and the soils is approximately $2.5 million less than incinerating these materials combined with landfilling the ash.

U.S. EPA's Response:

The U.S. EPA agrees that the estimated cost difference between the two options is approximately $2.5 million. The complete incineration option was chosen over a combination of landfilling and incineration for two reasons. The first reason was that the total incineration option was considered more protective of public health and the environment. The long-term dependability of any landfill is unknown. This has been supported by the difficulty of current facilities in meeting the U.S. EPA's Off-site Policy. The second reason was the goal of SARA to use permanent treatment technologies to the greatest extent practicable. With the mobile incinerator on site, it is clearly practicable to treat the additional material.

While the current estimated difference between these two options is $2.5 million, the actual difference could be much lower. This is true for two reasons. The first reason is that the soils which are in contact with the cinder block walls and unlined bottoms of the pits are believed to have contaminant levels similar to the sludges and oil and therefore would need to be incinerated under either option. The second reason is that much of the ash may pass the necessary tests which would enable it to be disposed of in a sanitary landfill.

Comment:

- Considering the quantity of ash generated, the volume reduction from incineration is not significant.

U.S. EPA's Response:

[redacted] of SARA is to reduce toxicity, mobility, or volume. By [redacted]ting the soils and non-pumpable sludge in Pit 4, toxicity is significantly and volume is decreased by approximately 20%. [redacted] is also addressed by eliminating the majority of the [redacted]ous constituents and the most mobile constituents.

Comments:

- What ARARs were considered in weighing various alternatives.

U.S. EPA's Response:

The ARARs considered in weighing the various alternatives included the Resource Conservation and Reclamation Act (RCRA), the Toxic Substances Control Act (TSCA), the Clean Water Act (CWA), the Clean Air Act (CAA), Chapters 3704, 3734, of the Ohio Revised Code (ORC) Section 3745-15, 17, 18, and 21 as well as 50 through 59 OAC dealing with air and water contamination and Chapter 3745-31 of the ORC dealing with untertaking a solid waste disposal facility.

C. Time Limits

The commentors expressed concern regarding the length of the public comment period and the time period for producing a good faith offer. The specific comments are dealt with below:

Comment:

- No notice of the draft FS was received prior to the PRP notice letter dated August 18, 1987 and postmarked August 21, 1987. EPA's failure to allow adequate, reasonable, and meaningful opportunities in which to comment is contrary to public participation provisions.

U.S. EPA's Response:

The public comment period must last a minimum of 21 days as specified under the National Contingency Plan. A 21-day comment period for the site was established from August 10, 1987 to August 31, 1987 by the placing of an announcement in the local paper on August 4, 1987. In addition to this announcement, the special notice letters were sent to the PRPs.

Requests were made by various PRPs for an extension of the comment period. An extension was granted by U.S. EPA to September 11, 1987. This allowed 21 days from the actual mailing of the notice letters and 32 days overall.

Also, this action is one in a series of activities that have been taken related to this site. The PRPs have been aware that a PFS was in [redacted]ration and that their own study, undertaken in response to an EPA [redacted]strative Order, would in part be the basis for the the PFS. The [redacted]EPA feels adequate time was provided for review of and comment on the PFS.

Comment:

- The Agency did not provide complete copies of the study with the notice of letters. Only selected excerpts were sent.

U.S. EPA's Response:

Complete copies of the report were sent out to the members of the steering committee which had been established by the PRPs in existing litigation on past costs. In addition, complete copies of the PFS were placed in the Information Repositories located in Jefferson and Ashtabula, Ohio, and at the U.S. EPA Region V office, located in Chicago, Il. It would not have been feasible to provide complete copies of the report to each of the more than 300 PRPs involved with the site who received special notices.

Comment:

- At the PRP meeting on September 4 in Cleveland, EPA announced that the deadline for good faith proposals to perform the next phase of work would end on October 23, 1987. Because the EPA will not announce its final decision until the end of the September, after considering public comment, there is an objection to the triggering of the 60-day deadline under the CERCLA Section 122 "special notice" procedures.

U.S.EPA's Response:

The U.S. EPA is currently developing guidance on the timing of the issuance of "Special Notice" letters. While there are several possible approaches, the present procedure being followed is to initiate the 60 day moratorium/period of negotiation concurrent with the public comment period and Record of Decision review and approval process. The advantage of this approach is the oppurtunity it provides PRPs to get involved in the alternative evaluation process through the submission of formal comments.

D. Funding

Comment:

- PRP liability for cost incurred should be allocated in accordance with the degree to which parties contributed substances to which EPA may legally respond under CERCLA not on volume of oil disposed of.

[redacted]'s Response:

[redacted]ion of liability is not a factor in the choice of remediation [redacted] will not be dealt with in this responsiveness summary.

Comment:

- Section 104 of the Superfund Act requires that States assume a share of the costs of Remedial activity. The PFS does not indicate whether or not this requirement has been satisfied.

U.S. EPA's Response:

The issue of State share was not discussed in the FFS because it had no bearing on the feasibility or effectiveness of the alternatives. The State is responsible for 10% of the remedial actions capital cost and 10% of the first years operation and maintenence (O&M). All subsequent O&M would be funded by the state. The State of Ohio concurs with the U.S. EPA's choice of source removal and will fund its cost share.

E. General

Comment:

- The maps on pages 6 and 31 should have the pits numbered in increasing order from right to left.

U.S. EPA's Response:

The pits should be numbered in increasing order from right to left.

[redacted]

[redacted]

[redacted]

RECORD OF DECISION SUMMARY
LASKIN POPLAR OIL SITE
JEFFERSON, OHIO